217/782-2113

CONSTRUCTION PERMIT

PERMITTEE

Central Illinois Energy Cooperative
Attn: Michael W. Smith
23133 East County Highway 6
Canton, Illinois 61520

Application No.: 02090041 I.D. No.: 057803AAD
Applicant's Designation: CANTONETOH Date Received: September 23, 2002
Subject: Ethanol Plant
Date Issued: May 21, 2003
Location: 23133 East County Highway 6, Canton

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of a fuel ethanol plant with a primary fluidized bed boiler (with limestone bed injection, SNCR, desulfunator/dry scrubber and baghouse), a secondary gas-fired boiler, grain elevator, cooking/fermentation/liquefaction equipment (with associated methanator flare), indirect steam-tube distillers grain drying equipment, finished product tanks, ethanol loadout (controlled by a flare) and rail loadout (controlled by a flare), and other ancillary operations as described in the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

1.0 Unit Specific Conditions

1.1 Group 1: Boilers and Other Combustion Devices

1.1.1 Description

The source will have a primary fluidized bed (FB) boiler fired with coal refuse and coal to supply steam and electricity needed to run the ethanol plant. In addition, the exhaust generated from the distillers grain drying process will be routed through a cyclone and a forced draft fan to serve as combustion air to the boiler.

The emissions of the primary boiler will be controlled by addition of limestone in the bed, a selective noncatalytic reduction (SNCR) system, in-duct desulfonator/dry scrubber, and a baghouse. The feeding of limestone into the fluidized bed supports a reaction between calcium and sulfur that captures much of the sulfur that would otherwise be emitted as sulfur dioxide ($SO_2$) from the process.

In the desulfonator/dry scrubber, lime in a slurry form is injected into the hot flue gases after the economizer. This should remove an additional quantity of sulfur so as to assure overall effectiveness of $SO_2$ removal of over 98%.

In the SNCR system, ammonia will be injected into the ductwork of the boiler to control emissions of nitrogen oxides ($NO_x$). A baghouse will be used to control particulate matter.

The source will also have a smaller secondary, natural gas-fired boiler which will be used as a backup to the coal fired boiler and a grain dryer for drying wet grain.

1.1.2 List of Emission Units and Pollution Control Equipment

| Emission Unit | Equipment | Description/Date of Construction | Emission Control Equipment |
|---|---|---|---|
| Group 1 EP1-A | Primary Boiler | Fluidized Bed Boiler, with limestone bed injection (211 mmBtu/hr for solid fuel) | Flue Gas Recirculation, SNCR, Desulfontor/Dry Scrubber and Baghouse |
| EP-2-B | Secondary Boiler | Natural Gas-Fired Boiler (160 mmBtu/hr) | Low $NO_x$ Burner |
| | | Raw Grain Dryer (rated at 51 mmBtu/hr) | None |
| EP1-E | | Lime Truck Unloading to Lime Storage Bins | Bin vent filters |
| EP-15 | | Methanator (Digester) Flare | None |

1.1.3 Applicability Provisions and Applicable Regulations

a. An "affected boiler" for the purpose of these unit specific conditions is a boiler identified in Conditions 1.1.1 and 1.1.2.

b. Affected Coal Fired Boiler:

i. The affected coal-fired boiler is subject to the Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60, Subparts A and Db. On and after the date on which the initial performance test is completed or is required to be completed under 40 CFR 60.8, whichever date comes first:

A. Opacity shall not exceed 20 percent (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity. This standard shall

apply at all times, except during periods of startup, shutdown or malfunction as provided by 40 CFR 60.2 and 60.8(c).

B. Particulate matter emissions shall not exceed 22 ng/J per actual heat input in any one hour period (0.051 lb/million Btu), pursuant to 40 CFR 60.43b(a)(1). This standard shall apply at all times, except during periods of startup, shutdown or malfunction as provided by 40 CFR 60.2 and 60.8(c).

C. Nitrogen oxide emissions shall not exceed 260 ng/J (0.60 lb/million Btu) on a 30-day rolling average, pursuant to 40 CFR 60.44b(a)(3)(ii).*

* Condition 1.1.6 requires a lower emission rate.

D. Sulfur dioxide ($SO_2$) emissions shall not exceed 520 ng/J (1.2 lb/million Btu) and 10 percent of the potential $SO_2$ emission rate,* on a 30-day rolling average, pursuant to 40 CFR 60.42b(a).

* Condition 1.1.6 requires a lower emission rate.

ii. At all times, the Permittee shall maintain and operate the boiler, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions, pursuant to 40 CFR 60.11(d).

iii. The emission of carbon monoxide (CO) from the affected boiler shall not exceed 200 ppm CO, corrected to 50 percent excess air [35 IAC 216.121].

c. <u>Natural Gas-Fired Boiler</u>:

i. The affected gas-fired boiler is subject to the Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60, Subparts A and Db.

A. Nitrogen oxide ($NO_x$) emissions shall not exceed 45 ng/J (0.10 lb/million Btu) on a

30-day rolling average, pursuant to 40 CFR 60.44b.

B. This permit is issued based on the boiler not being subject to the limits of the NSPS for opacity and sulfur dioxide because the boiler does not burn oil or solid fuel.

ii. At all times, the Permittee shall maintain and operate the boiler, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions, pursuant to 40 CFR 60.11(d).

iii. The emission of smoke or other particulate matter from the boiler shall not have an opacity greater than 30 percent, except as allowed by 35 IAC 212.123(b) and 212.124. Compliance with this limit shall be determined by 6-minute averages of opacity measurements in accordance with USEPA Reference Method 9. [35 IAC 212.109 and 212.123(a)]

iv. The emission of carbon monoxide (CO) into the atmosphere from the boiler shall not exceed 200 ppm, corrected to 50 percent excess air. [35 IAC 216.121]

d. Malfunction and Breakdown Provisions

In the event of a malfunction or breakdown of an affected boiler, the Permittee is authorized to continue operation of the affected boiler in violation of the applicable requirements of Conditions 1.1.3(b)(iii), 1.1.3(c)(iii) and (c)(iv), as necessary to prevent risk of injury to personnel or severe damage to equipment, provided however that operation shall not continue solely for the economic benefit of the owner or operator of the plant. This authorization is made pursuant to 35 IAC 201.262 and is subject to the following requirements:

i. Upon occurrence of excess emissions due to malfunction or breakdown, the Permittee shall as soon as practicable repair the boiler or remove the boiler from service, so that excess emissions cease, unless shutting down the boiler would lead to a greater amount of emissions during subsequent startup than would be caused by continuing to run the boiler for

a short period until repairs can be made. This shall be accomplished within 24 hours or noon of the Illinois EPA's next business day, whichever is greater, unless the Permittee obtains an extension from the Illinois EPA. The Illinois EPA may grant such extension if the Permittee demonstrates that the affected boiler(s) could not be reasonably repaired or removed from service within the allowed time and that, based on the actions which have been taken and will be taken, the Permittee is taking reasonable steps to minimize excess emissions and will repair the affected boiler(s) or remove it from service as soon as practicable.

ii. The Permittee shall operate and maintain the boiler in accordance with written operating procedures developed and maintained by the Permittee. These procedures shall reflect good air pollution control practice for the boiler, including use of natural gas in the coal-fired boiler during startup and malfunction or breakdown as practicable to minimize excess emissions.

iii. The Permittee shall fulfill applicable recordkeeping and reporting requirements of Conditions 1.1.9 and 1.1.10 with respect to malfunctions and breakdowns.

iv. Following notification to the Illinois EPA of a malfunction or breakdown with excess emissions, the Permittee shall comply with all reasonable directives of the Illinois EPA with respect to such incident, pursuant to 35 IAC 201.263.

e. Startup Provisions

The Permittee is authorized to operate the affected boiler(s) in violation of the applicable state emission standards of Conditions 1.1.3(b)(iii), 1.1.3(c)(iii) and (iv) during startup, pursuant to 35 IAC 201.262.

1.1.4 Non-Applicability of Regulations of Concern

For the affected coal-fired boiler, this permit is issued based on the state emissions standards for particulate matter and opacity at 35 IAC 212.123 and 212.204 being

superseded by more stringent standards pursuant to the NSPS.

1.1.5 Operational and Production Limits and Work Practices

a. i. The maximum firing rate of the coal-fired boiler shall not exceed 211 mmBtu/hr.

ii. The usage of solid fuel in the coal-fired boiler shall not exceed 10,000 tons/month and 120,000 tons/year.

iii. The coal-fired boiler shall be designed so that:

A. An initial startup and basic shakedown of the boiler can be completed before initial startup of the feed drying equipment.

B. The uncontrolled organic material emissions from the feed drying equipment and other process units that enter the boiler shall be reduced such that the material emitted from the boiler is either no more than 4 percent of the uncontrolled emissions (at least 96 percent control) or no more than 16 ppm by volume.

iv. During the venting of process emissions to the boiler the boiler combustion temperature shall be maintained at a temperature that is consistent with the temperature at which emission testing demonstrated compliance with applicable requirements.

v. Process vent streams shall be used as primary combustion air or introduced into the flame zone of the boiler, as defined by 40 CFR 60.661.

b. i. Natural gas shall be the only fuel fired in the gas-fired boiler.

ii. The maximum firing rate of the boiler shall not exceed 160 mmBtu/hr.

iii. A. The operation of the boiler shall not exceed 1000 hours in any consecutive 12 month period.

B. Natural gas usage in the gas-fired boiler shall not exceed 80,000,000 scf/month and 160,000,000 scf/year.

C. The above restrictions on the operation of the gas-fired boiler shall become effective when shakedown of the coal-fired boiler is complete (See also Condition 1.1.6(a)(iii)).

c. i. Natural gas shall be the only fuel fired in the raw grain dryer.

ii. The raw grain dryer shall not operate for more than 1,000 hours in any 12 month period.

iii. Natural gas usage in the raw grain dryer shall not exceed 51,000,000 scf/year.

d. The exhaust from the anaerobic digester shall be routed through the methanator flare during periods of malfunction, breakdown and startup of the affected coal-fired boiler.

1.1.6 Emission Limitations

a. i. The emissions of the affected coal-fired boiler shall not exceed the following limits. The annual limits address all emissions from the boiler, including emissions during startup, malfunction and breakdown, as authorized by Condition 1.1.3(d) and (e).

| CO | | PM* | | VOM | |
|---|---|---|---|---|---|
| (Lb/Hr) | (T/Yr) | (Lb/Hr) | (T/Yr) | (Lb/Hr) | (T/Yr) |
| | | | | | |
| 19.86 | 87.0 | 8.36 | 36.6 | 4.57 | 20.0 |

| $NO_x$ | | $SO_2$ | | HCl | |
|---|---|---|---|---|---|
| (Lb/Hr) | (T/Yr) | (Lb/Hr) | (T/Yr) | (Lb/Hr) | (T/Yr) |
| | | | | | |
| 110.0 | 90.0 | 330.0 | 96.2 | 2.1 | 9.2 |

* Filterable particulate matter

ii. The emissions of $NO_x$ and $SO_2$ from the affected coal-fired boiler shall not exceed 0.120 and 0.112 lb/mmBtu, respectively, on a 30-day running average. Compliance with these limits shall be determined in accordance with the NSPS, unless emissions are on an hourly basis in pounds, in which case compliance with this

limit may be determined by dividing the total mass of emissions by the total heat input for each period of 30 boiler operating days.

iii. The above limitations are not effective during shakedown of the boiler. During shakedown of the boiler, the Permittee shall operate the boiler and associated control equipment to the extent reasonably practicable and the emissions of the coal-fired boiler and gas-fired boiler, combined, shall not exceed the following limitations during each calendar month. For this purpose, unless extended in writing by the Illinois EPA based on a showing by the Permittee, the shakedown period shall end on the last day of the fifth complete month after the coal-fired boiler first fired solid-fuel.

| CO | PM | VOM | $NO_x$ | $SO_2$ | HCl |
|---|---|---|---|---|---|
| 7.35 | 2.50 | 1.50 | 7.15 | 7.20 | 0.70 |

Limits are in tons.

b. The emissions of the affected gas-fired boiler shall not exceed the following limits. The annual limits address all emissions from the boiler including emissions during startup, malfunction and breakdown as authorized by Condition 1.1.3(d) and (e). The limitations on annual emissions shall become effective when shakedown of the coal-fired boiler is complete (See also Condition 1.1.6(a)(iii)). These limitations are based on information in the application for maximum emission rates of the gas-fired boiler, including achievement of an emission rate for $NO_x$ of 0.05 lb/million Btu.

| CO | | PM* | | VOM | | $NO_x$ | | $SO_2$ | |
|---|---|---|---|---|---|---|---|---|---|
| (Lb/hr) | (T/yr) | (Lb/hr) | (T/yr) | (Lb/hr) | (T/yr) | (Lb/hr) | (T/yr) | (Lb/hr) | (T/yr) |
| 13.44 | 6.72 | 1.22 | 0.61 | 0.88 | 0.44 | 8.0 | 4.0 | 0.1 | 0.05 |

* Filterable particulate matter

c. The emissions of the raw grain dryer shall not exceed the following limits:

| CO | | PM* | | VOM | | $NO_x$ | | $SO_2$ | |
|---|---|---|---|---|---|---|---|---|---|
| (Lb/hr) | (T/yr) | (Lb/hr) | (T/yr) | (Lb/hr) | (T/yr) | (Lb/hr) | (T/yr) | (Lb/hr) | (T/yr) |
| 4.28 | 2.14 | 25.03 | 12.51 | 0.28 | 0.14 | 2.55 | 1.28 | 0.03 | 0.02 |

* Filterable particulate matter

d. Emissions of VOM, CO and $NO_x$ directly from the methanator (which is controlled by the digester flare) shall each not exceed 1.2 lb/hour and 0.44 tons/year.

e. Emissions of particulate matter from lime unloading and storage shall not exceed 0.1 lb/hour and 0.44 tons/year.

1.1.7 Testing Requirements

a. The Permittee shall perform monthly sampling for the solid fuel used in the coal-fired boiler using the procedures in ASTM D2234, which result in data at least as reliable as classification II - D-2, defined in ASTM D2245 as manual sampling - stationary coal/coke sampling - random spacing and analyze these samples for ash content, sulfur content, and heat content according to the applicable methods and procedures in 35 IAC 214.101(c). Analytical results obtained from the supplier of a fuel may also be used to demonstrate compliance with this provision.

b. The Permittee shall have emissions testing performed for the affected units in accordance with Condition 2.0.

1.1.8 Monitoring Requirements

a. Emissions monitoring for nitrogen oxides:

i. For each affected boiler, pursuant to 40 CFR 60.48b the Permittee shall install*, calibrate, operate and maintain a continuous emission monitoring system (CEMS) for measuring the $NO_x$ emissions from the affected boilers. The procedures under 40 CFR 60.13 shall be followed for installation, evaluation, and operation of the continuous monitoring systems. This CEMS shall be operated during all periods of operation of the affected boilers except for CEMS breakdowns and repairs. This CEMS shall obtain emission data for at least 75 percent of the operating hours in at least 22 out of 30 successive boiler operating days. [40 CFR 60.486(f)]. Data is to be recorded during calibration checks, and zero and span adjustments.

The 1-hour average $NO_x$ emission rates measured by the CEMS shall be expressed in lb/million Btu heat input and shall be used to calculate average emission rates for purposes of the NSPS. The 1-hour averages shall be calculated using the data points required under 40 CFR 60.13(b). At least 2 data points must be used to calculate each 1-hour average. The procedures under 40 CFR 60.13 shall be followed for installation, evaluation, and operations of the CEMS.

* The monitor shall be installed and operational prior to initial firing of solid fuel in the boiler.

ii. Following the shakedown period provided by Condition 3(e), continuous emission monitoring on the natural gas boiler may be discontinued if either:

A. A parametric monitoring plan is approved by the Illinois EPA, or

B. Operation of the boiler is limited to an annual capacity factor of no more than 10 percent (equivalent to an annual heat input of no more than 140,000 million Btu.

b. Monitoring for opacity:

For the affected coal-fired boiler, pursuant to 40 CFR 60.48b, the Permittee shall install*, operate, calibrate and maintain continuous monitoring equipment for the measurement of opacity from the boiler.

i. This monitoring equipment shall be operated pursuant to written or electronic monitoring procedures that include a quality assurance/control plan, which procedures shall reflect the manufacturer’s instructions as adopted by the Permittee based on its experience; and

ii. This monitoring equipment shall meet the performance specifications and operating requirements in Sections 3.1 through 3.8 of 40 CFR 51, Appendix P (1987).

* The monitor shall be installed and operational prior to initial firing of solid fuel in the boiler.

c. Emissions monitoring for sulfur dioxides:

Pursuant to 40 CFR 60.47b, for the affected coal-fired boiler, the Permittee shall install*, calibrate, operate and maintain a CEMS for measuring the $SO_2$ concentrations from the affected boiler. The procedures and either oxygen ($O_2$) or carbon dioxide ($CO_2$) concentrations and shall record the output of the systems, pursuant to 40 CFR 60.47b and 40 CFR 60.13 shall be followed for installation, evaluation, and operation of the continuous monitoring systems. The sulfur dioxide concentrations shall both be monitored at the inlet and outlet of the sulfur dioxide control device. This CEMS shall obtain emission data for at least 75 percent of the operating hours in at least 22 out of 30 successive boiler operating days [40 CFR 60.47b(c)]. Data is to be recorded during calibration checks, and zero and span adjustments.

The 1-hour average $SO_2$ emission rates measured by the CEMS shall be expressed in lb/million Btu heat input and shall be used to calculate average emission rates for purposes of the NSPS. The 1-hour averages shall be calculated using the data points required under 40 CFR 60.13(b). At least 2 data points must be used to calculate each 1-hour average. The 1-hour average is based on more than 30 minutes of boiler operation. [40 CFR 60.47b(d)] The procedures under 40 CFR 60.13 shall be followed for installation, evaluation, and operations of the CEMS.

* The monitor shall be installed and operational prior to initial firing of solid fuel in the boiler.

d. Emissions monitoring for carbon monoxide

For the affected coal-fired boiler, the Permittee shall install a CEMS for carbon monoxide within one year of the initial testing conducted pursuant to Conditions 1.1.7(b) and 2.0 unless such testing, or testing in the subsequent nine months, demonstrates that the boiler can consistently comply with a CO emission limitation of 15 pounds per hour. If such a CEMS is required, the Permittee shall thereafter calibrate, operate and maintain the CEMS in accordance with the generally applicable requirements

of the NSPS for CEMS, including recordkeeping and reporting as set forth in Conditions 1.1.9(b) and 1.1.10(a). In addition, the Permittee shall demonstrate compliance with the hourly CO emission limit in Condition 1.1.6(a)(i) as a three-hour block average. In the operating permit for the plant, the Illinois EPA may revise the requirements applicable to the CEMS, including allowing the removal of the CEMS, based on the data that has been collected.

e. i. The Permittee shall equip the boiler with a continuous monitoring device for the boiler combustion chamber temperature.

ii. The Permittee shall either equip the boiler with device(s) to indicate flow of principle process vent stream(s) to the boiler or equip the bypass or emergency release vents for such streams, if any, with device(s) to indicate flow through the vent, which device(s) which shall record such information at least once every hour.

iii. These devices shall be installed, calibrated, and maintained according to the supplier's specifications and shall be operated at all times that the boiler is in use.

f. Methanator Flare

The flare shall be equipped with a monitor or other device to confirm presence of a flame if process gas is being sent to the flare.

1.1.9 Recordkeeping Requirements

a. The Permittee shall maintain a file that contains the following information:

i. The maximum rated heat input of each affected unit.

ii. The current Process and Instrumentations Diagram(s) for the plant.

iii. Records of the Permittee's established operating, maintenance and monitoring procedures for each affected boiler.

b. The Permittee shall maintain records of the following information for $NO_x$ and $SO_2$ for the coal-fired boiler and $NO_x$ for the gas-fired boiler, for each boiler operating day, pursuant to the NSPS:

i. Calendar date;

ii. The average hourly emission rates (expressed in lb/million Btu heat input) measured or predicted;

iii. The 30-day average emission rate (lb/million Btu heat input) calculated at the end of each affected boiler operating day from the measured or predicted hourly emission rates for the preceding 30 boiler operating days;

iv. Identification of the boiler operating days when the calculated 30-day average emission rates are in excess of an applicable standard, with the reasons for such excess emissions as well as a description of corrective actions taken;

v. Identification of the affected boiler operating days for which emission data have not been obtained, including a description of corrective actions taken;

vi. Identification of the times when emission data have been excluded from the calculation of average emission rates and the reasons for excluding data;

vii. Identification of "F" factor used for calculations, method of determination, and type of fuel combusted;

viii. Identification of the times when the pollutant concentration exceeded full span of the continuous monitoring system;

ix. Description of any modifications to the continuous monitoring system that could affect the ability of the continuous monitoring system to comply with Performance Specification 2 or 3;

x. Results of daily CEMS drift tests and quarterly accuracy assessments as required under Appendix F, Procedure 1 of 40 CFR 60.

c. Affected Coal-Fired Boiler:

i. Total operating hours (hours/month and hours/year);

ii. Amount of fuel consumed, by type (tons/month and tons/year) and the annual capacity factor, determined on a 12-month rolling basis with a new annual capacity factor calculated for each month;

iii. Amounts of limestone, lime and ammonia used in the boiler (tons/month);

iv. Records for sulfur content (wt. percent) in the fuel supply to the coal-fired boiler received. Supplier analysis of the fuel supplied to the Permittee may be used to satisfy fuel sampling requirements, provided that sampling and analysis follow ASTM methods; and

v. The Permittee shall keep records of the annual $NO_x$, VOM, CO, PM, $SO_2$ and HCl emissions from the affected boiler, based on continuous emissions monitoring data, fuel consumption and applicable emission factors established in Condition 1.1.12, with supporting calculations.

d. Affected Gas-Fired Boiler:

i. Natural gas consumption (mmscf/day and mmscf/yr), and the annual capacity factor, determined on a 12-month rolling basis with a new annual capacity factor calculated for each month;

ii. Hours of operation (hours/day and hours/year); and

iii. Emissions of $NO_x$, VOM, CO, PM and $SO_2$ calculated based on compliance procedure established in Condition 1.1.12.

e. Records for Startups of Affected Boilers:

The Permittee shall maintain records for each startup of an affected boiler.

f. Records for Continued Operation during Malfunctions and Breakdowns of Affected Boilers:

i. A maintenance and repair log for each affected boiler and associated control equipment, listing each activity performed with date; and

ii. Records for each incident when operation of an affected boiler continued during malfunction or breakdown, including the following information:

A. Date and duration of malfunction or breakdown.

B. A description of the malfunction or breakdown.

C. The corrective actions used to reduce the quantity of emissions and the duration of the incident.

D. If excess emissions occurred for four or more hours:

An explanation why continued operation of the affected boiler was necessary.

The preventive measures planned or taken to prevent similar malfunctions or breakdowns or reduce their frequency and severity.

An estimate of the magnitude of excess emissions during the incident.

g. The Permittee shall keep records of maintenance, calibration and operational activity associated with each continuous monitoring equipment.

h. Records for Other Units:

The Permittee shall keep the following records for the other units:

i. Operating hours and fuel usage of the raw grain dryer.

ii. Operating hours of the methanator flare.

iii. The Permittee shall maintain records of the following items for the biomethanation system:

A. Amount of bio-gas generation.

B. Amount of bio-gas directed to the flare.

C. Amount of gas consumed by the pilot flame for the flare, if any.

D. Information for periods of time when the flare operated without a flame present in the flare, including amount of gas exhausted through the flare.

1.1.10 Reporting and Notification Requirements

a. The Permittee shall fulfill applicable reporting requirements of the NSPS, 40 CFR 60.7 and 49b, for the affected boilers by sending the following notifications and reports to the Illinois EPA:

i. The Permittee shall submit notification of the date of initial startup of the boiler, as provided by 40 CFR 60.7. This notification shall include: (1) the design heat input of the boiler, and (2) the annual capacity factor at which the Permittee anticipates operating the boiler.

ii. The Permittee shall submit informational reports containing the information recorded under 40 CFR 60.49b(g).

iii. The Permittee shall submit reports for excess emissions.

These reports shall be postmarked by the $30^{th}$ day following the end of reporting period, unless submittal in electronic format is approved by the Illinois EPA.

b. The Permittee shall submit excess emission reports for any calendar quarter during which there are excess emissions from the affected boiler. If there are no excess $NO_x$ emissions during the calendar quarter, the Permittee shall submit a report semiannually stating that no excess emissions occurred during the semiannual reporting period. Excess emissions are defined as any calculated 30-day rolling average emission rate, which exceeds the applicable limits in Conditions 1.1.3(b) or 1.1.6 (a)(ii) or any hourly rate which exceeds the limit in Condition 1.1.6(a)(i).

c. The excess emission reports shall also address any other exceedance of the requirements of this permit for the affected boilers, as determined by the records required by this permit or by other means. For this purpose, the report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or violation and efforts to reduce emissions and future occurrences.

d. For other affected units, the Permittee shall notify the Illinois EPA within 30 days of deviations from applicable requirements of this permit.

e. The reporting period for reports required under this section is each 6 month period. The Permittee may submit quarterly electronic reports in lieu of the written reports.

1.1.11 Operational Flexibility/Anticipated Operating Scenarios

None

1.1.12 Compliance Procedures

a. i. For the coal-fired boiler, compliance with the $NO_x$ standards and limitations shall be determined by the continuous emissions monitoring system required by Condition 1.1.8(a).

ii. For the natural gas-fired boiler, compliance with $NO_x$ standards and limitations shall be determined by the continuous emissions monitoring system required by Condition 1.1.8(a), unless such monitoring is discontinued in accordance with Condition 1.1.8(a)(ii).

b. For the affected coal-fired boiler, compliance with $SO_2$ and opacity standards and limitations shall be determined by the continuous emissions monitoring system required by Condition 1.1.8(c).

c. For pollutants for which continuous emissions monitoring is not conducted, compliance with applicable emission standards and limitations shall be based on emission testing, the records required by Condition 1.1.9, proper operation of equipment, and the use of appropriate emission factors.

1.2 Unit 2 - Fuel Handling Operations
Various control measures

1.2.1 Description

The Permittee transfers and stores fuel for the main boiler in an enclosed building. Various conveyor belts (with associated hoppers) and transfer points) transfer fuel from the enclosed pile to the main boiler. The waste fuel is not crushed on-site. Particulate matter (PM) emissions associated with these operations are controlled by various measures including the moisture content of the fuel, enclosure and covers, and dust collection devices.

The Permittee also handles lime for the main boiler in similar operations.

1.2.2 List of Emission Equipment and Pollution Control Equipment

The following is a list of the coal handling operations and associated control systems at the source as of the "date issued" as shown on page 1 of this permit.

| Emission Unit | Description | Emission Control Equipment |
|---|---|---|
| 1-B | Truck Receiving*<br><br>Fuel Transfer Conveyor System* | Enclosed Building<br><br>Bag Filter** |

* Bulk Coal Handling Units enclosed under the enclosed coal building

** PM emissions from the transfer belt conveyor and fuel supply conveyor are routed to a bag filter

1.2.3 Applicability Provisions and Emissions Standards

a. For the purpose of these unit-specific conditions, an "affected operation" is an emission unit that is described in Condition 1.2.1 and 1.2.2. An affected unit does not include a unit that changes the size of the material, e.g., those addressed by Section 1.3.

b. Each affected operation shall comply with the standard in Condition 3.0, which addresses visible emissions of fugitive particulate matter, as defined by 35 IAC 211.2490, from the operation. [35 IAC 212.301]

c. Each affected operation shall comply with the standard in Condition 3.0, which addresses the

opacity of the emission of smoke or other particulate matter from the operation. [35 IAC 212.123]

1.2.4 Non-Applicability of Regulations of Possible Concern

Affected operations are not subject to 35 IAC 212.321 or 212.322 because of the disperse nature of the operations, as generally addressed by 35 IAC 212.323.

1.2.5 Operational Limits

None

Note: The throughput of affected operations is constrained by the limitation for the fluidized boiler.

1.2.6 Emission Limits

Annual emissions of particulate matter (PM) from the affected operations shall not exceed 1.9 tons/year. Compliance with this annual emission limit shall be determined from a running total of 12 months of emission data, calculated from the material throughput and appropriate emission factors (Refer to Conditions 1.2.10(b) and (c), and 1.12.13(a)).

1.2.7 Control Requirements

a. The Permittee shall implement and maintain control measures for the affected operations, such as enclosure, natural surface moisture, and use of dust collection devices, that minimize visible emissions of particulate matter and provide a reasonable assurance of compliance with the applicable emission standard in Condition 1.2.6.

b. The Permittee shall operate and maintain each affected operation with the control measures identified in Condition 1.2.2.

1.2.8 Testing Requirements

None

1.2.9 Inspection Requirements

The Permittee shall perform inspections on at least a monthly basis of affected operations, including associated control measures, while the operations are in use, to confirm compliance with the requirements of Condition 1.2.7. These inspections may be scheduled so that only a number of affected operations are reviewed during each

inspection, provided however, that all affected operations shall be inspected at least once during each calendar quarter.

1.2.10 Recordkeeping Requirements

The Permittee shall keep the following records related to the affected operations:

a. The Permittee shall maintain a record of any changes to the control measures that it is currently following for different affected fuel handling operations pursuant to Condition 1.2.7. These control measures, as defined by the Permittee through these records, are referred to as the "established control measures" in this subsection of the construction permit.

b. The Permittee shall maintain the following operating records:

   The amount of coal and other solid fuels received at the source (tons/month, by type of fuel).

c. The Permittee shall maintain records of the following for the inspections required by Condition 1.2.9:

   i. Date and time the inspection was performed and name(s) of inspection personnel;

   ii. Area or specific operations inspected;

   iii. The observed condition of the established control measures, for the inspected area or operations; and

   iv. A description of any maintenance or repair associated with established control measures that is recommended as a result of the inspection and a review of outstanding recommendations for maintenance or repair from previous inspection(s), i.e., recommended action has been taken, is yet to be performed or no longer appears to be required.

d. The Permittee shall maintain records of the following for each incident when the bag filter is not operating or visible emissions of fugitive particulate matter is present beyond the property line or at levels to cause an exceedance of the permitted limits:

i. The date of the incident and identification of the affected operation(s) that were involved;

ii. A description of the incident, including the established control measures that were not present or implemented; the established control measures that were in use, if any; other control measures or mitigation measures that were implemented, if any; and the amount of PM emitted during the incident;

iii. The time at and means by which the incident was identified, e.g., scheduled inspection or observation by operating personnel;

iv. The length of time after the incident was identified that the affected operation(s) continued to operate before established control measures were in place or the operations were shutdown (to resume operation only after established control measures were in place) and, if this time was more than one hour, an explanation why this time was not shorter, including a description of any mitigation measures that were implemented during the incident.

v. The estimated total duration of the incident, i.e., the total length of time that the affected operation(s) ran without established control measures and the estimated amount of coal handled during the incident; and

vi. A discussion of the probable cause of the incident and any preventative measures taken.

e. The Permittee shall keep a maintenance and repair log for each dust collection device, associated with affected operations. This log shall list the date and nature of maintenance and repair activities performed on the control equipment.

f. To demonstrate compliance with Condition 1.2.6, the Permittee shall keep records of PM emissions (tons/month and tons/year), with supporting calculations. These records shall be compiled on at least a quarterly basis.

1.2.11 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA of deviations from the requirements of Conditions 1.2.5,

1.2.6 or 1.2.7 as follows. Such notifications shall include a description of each incident and a discussion of the probable cause of deviation, any corrective actions taken, and any preventative measures taken:

Notification within 30 days for operation of an affected operation that was not in compliance with applicable requirements in Conditions 1.2.7 that continued for more than 12 hours from the time that it was identified. Such notifications shall be accompanied by a copy of the records for the incident required by Condition 1.2.10(e).

1.2.12 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to make the following physical or operational change with respect to affected operations without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee's obligation to continue to comply with applicable requirements or to properly obtain a construction permit in a timely manner for any activity for which such a permit is required pursuant to 35 IAC 201.142:

Operation of dust suppressant systems;
Operation of additional dust collection equipment.

1.2.13 Compliance Procedures

a. Compliance with the emission standards of Condition 1.2.6 is addressed by the control, inspection and recordkeeping required by Conditions 1.2.7, 1.2.9 and 1.2.10, respectively.

b. Compliance with the unit-specific emission limits of Condition 1.2.6 shall be based on the records required by Condition 1.2.9 and the use of manufacturer guaranteed emissions factors.

1.3 Group 3: Grain Receiving, Handling, Drying and Processing
Control: Filters and Cyclone Dust Collectors

1.3.1 Description

Corn will arrive at the plant by truck. Any wet corn received with greater than 20% moisture will also be dried prior to storage, with emissions vented to the gas-fired boiler.

To begin processing, corn will be screened to remove cobs and other foreign matter and be transferred to a "day bin", ground in a hammermill and conveyed to the slurry tank for enzymatic processing.

1.3.2 List of Emission Units and Pollution Control Equipment

| Emission Unit | Description | Emission Control Equipment |
|---|---|---|
| EP 10 | Truck Grain Receiving | Grain Receiving Bag Filter |
| EP 10 | Wet Grain Leg | Grain Receiving Bag Filter |
| EP 11 | Wet Corn Storage Bin | None |
| EP 17 | 1 Raw Grain Column Dryer* | None |
| EP 10 | Dry Grain Leg | Grain Receiving Bag Filter |
| EP 12 | Screening and Cleaning | Grain Receiving Bag Filter |
| EP 11 | Two Dry Corn Storage Bins | None |
| EP 12 | Milled Grain Conveyors and Elevators | Cleaning/Milling Bag Filter |

* See Condition 1.1 for combustion operation.

1.3.3 Applicability Provisions and Applicable Regulations

a. The "affected operations" for the purpose of these unit-specific conditions, are the grain handling operation as described in Conditions 1.3.1 and 1.3.2.

b. The affected operations are subject to 35 IAC 212, Subpart S: Agriculture. The Permittee shall comply with all applicable requirements of Subpart S (See also Condition 1.3.5).

1.3.4 Non-Applicability of Regulations of Concern

a. This permit is issued based on the affected operations not being subject to 35 IAC 212.321, because the affected operations comply with 35 IAC 212, Subpart S [35 IAC 212.461(a)].

b. This permit is issued based on the affected operations not being subject to 40 CFR 60, Subpart DD: Standards of Performance for Grain Elevators, because the source's total permanent grain storage capacity will not exceed the applicability threshold of the NSPS (threshold of 1,000,000 bushels permanent storage capacity). If the permanent grain storage of the plant, as built, is 1,000,000 bushels or more, grain handling operations will have to comply with 40 CFR Part 60, Subpart DD, including testing of control devices in accordance with 40 CFR Part 60.

1.3.5 Operational Limits and Control Requirements

a. Housekeeping Practices. The Permittee must implement and use the following housekeeping practices, pursuant to 35 IAC 212.461(b):

i. Air pollution control devices shall be checked daily and cleaned as necessary to insure proper operation.

ii. Cleaning and Maintenance.

A. Floors shall be kept swept and cleaned from boot pit to cupola floor. Roof or bin decks and other exposed flat surfaces shall be kept clean of grain and dust that would tend to rot or become airborne.

B. Cleaning shall be handled in such a manner as not to permit dust to escape to the atmosphere.

C. The yard and surrounding open area, including but not limited to ditches and curbs, shall be cleaned to prevent the accumulation of rotting grain.

iii. Dump Pit.

A. Aspiration equipment shall be maintained and operated.

B. Dust control devices shall be maintained and operated.

iv. Property. The yard and driveway of any source shall be asphalted, oiled or equivalently treated to control dust.

Note: Refer to Condition 1.8 for the detailed provisions for area sources of dust.

v. Housekeeping Check List. Housekeeping check lists to be developed by the Illinois EPA shall be completed by the manager and maintained on the premises for inspection by check lists to be developed by the personnel.

b. Cleaning and Separating Operations.

i. Particulate matter generated during cleaning and separating operations shall be captured to the extent necessary to prevent visible particulate matter emissions directly into the atmosphere.

ii. Air contaminants collected from cleaning and separating operations shall be conveyed through air pollution control equipment, which has a rated, and actual particulate removal efficiency of not less than 90 percent by weight prior to release into the atmosphere.

c. Dump-Pit Areas

i. Induced draft shall be applied to major dump pits and their associated equipment (including, but not limited to, boots, hoppers and legs) to such an extent that a minimum face velocity is maintained, at the effective grate surface, sufficient to contain particulate emissions generated in unloading operations. The minimum face velocity at the effective grate surface shall be at least 200 feet per minute, which shall be determined by using the equation:

$V = Q/A$

Where:

V = Face velocity

Q = Induced draft volume in scfm

A = Effective grate area in $ft^2$

ii. The induced draft air stream shall be confined and conveyed through air pollution control equipment which has an overall rated and actual particulate collection efficiency of not less than 90 percent by weight;

iii. Means or devices (including, but not limited to, wind deflectors) shall be employed to prevent a wind velocity in excess of 50 percent of the induced draft face velocity at the pit; provided, however, that such means or devices do not have to achieve the same degree of prevention when the ambient air wind exceeds 25 mph. The wind velocity shall be measured, with the induced draft system not operating, at a point midway between the dump-pit area walls at the point where the wind exits the dump-pit area, and at a height above the dump-pit area floor of approximately 2 ft; or

d. Internal Transferring Area.

i. Internal transferring area shall be enclosed to the extent necessary to prohibit visible particulate matter emissions directly into the atmosphere.

ii. Air contaminants collected from internal transfer operations shall be conveyed through air pollution control equipment which has a rated and actual particulate removal efficiency of not less than 90 percent by weight prior to release into the atmosphere.

e. The Permittee shall operate, maintain, and repair all air pollution control equipment in a manner that assures that the applicable emission limits set in this permit are met at all times. The actions taken by the Permittee to meet this requirement shall include at least the following:

i. Written operating procedures shall be maintained and updated describing normal process and equipment operating parameters; monitoring or instrumentation for measuring control equipment operating parameters, if any; and control equipment inspection and

maintenance practices. With respect to control equipment maintenance practices, the operating procedures may incorporate the manufactures recommended operating instructions, if a copy of these instructions is attached to the procedures.

ii. Visual inspections of air pollution control equipment shall be conducted on a regular schedule. These inspections shall include a detailed inspection of the performance and condition of control equipment at least once per year.

iii. Prompt repairs shall be made upon identification of need, either as a consequence of formal inspections or other observations.

iv. Written records of inspection, maintenance and repair activities shall be kept in accordance with Condition 1.3.9(c).

1.3.6 Emission Limitations

a. i. The baghouses for the affected processes shall be designed so as to not:

A. Discharge particulate matter in excess of 0.023 g/dscm (ca. 0.01 g/dscf).

B. Exhibit greater than 0 percent opacity.

ii. The affected processes shall be designed so that the opacity of any fugitive emission from:

A. Any individual truck unloading station, railcar unloading station, or railcar loading station, shall not exhibit greater than 5 percent opacity.

B. Any grain handling operation shall not exhibits greater than 0 percent opacity.

b. Emissions of particulate matter from the affected operations shall not exceed the following limits:

| Emission Unit | Emission Factor (lb/ton) | Control Efficiency, % | PM Emissions (tons/year) |
|---|---|---|---|
| Grain Receiving | 0.035 | 79.2 | 1.5 |
| Grain Legging | 0.061 | 99 | 1.4 |
| Corn Storage Vents | -- | -- | 0.44 |
| Grain Cleaning | 0.075 | 99 | 0.2 |
| Spent Grain Transfer | 0.061 | 90 | 0.4 |
| Hammermilling | 0.012 | 99 | 0.03 |
| Milled Grain Transfer | 0.061 | 90 | 0.95 |

Note: The above limits do not account for uncaptured emissions from the receiving of grain and loadout of feed or condensable particulate matter emissions, which are assumed to be equal to the captured or filterable emissions as addressed above.

Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

1.3.7 Testing Requirements

See Condition 2.0

1.3.8 Monitoring Requirements

None

1.3.9 Recordkeeping Requirements

In addition to the records required by Condition 3.0, the Permittee shall maintain records of the following items for the affected operations to demonstrate compliance with Conditions 1.3.5 and 1.3.6:

a. The permanent grain storage capacity of the plant, with supporting documentation, such record shall be updated if the permanent grain storage capacity of the plant changes.

b. Grain Received (bushels/month and bushels/year);

c. Condition of equipment at least once per operating day and key operating parameters for air pollution control equipment, at least once per operating day;

d. Inspections, other equipment observations, preventative maintenance, maintenance activities other than preventative maintenance, and repair of air pollution control equipment which includes: date, duration, nature, and description of observation or action; and

e. PM emissions from the affected grain handling operation (tons/month and tons/year) with supporting calculations.

1.3.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA of deviations of the affected operations with the permit requirements as follows. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

a. Operation of the affected operations in excess of the throughput limitations specified by Conditions 1.3.5(e) and (f) within 30 days of such an occurrence.

b. Emissions of PM from the affected grain handling operation in excess of the limits specified in Condition 1.3.6 within 30 days of such an occurrence.

c. Any other deviations that apply to affected operations.

1.3.11 Operational Flexibility/Anticipated Operating Scenarios

None

1.3.12 Compliance Procedures

Compliance with the unit-specific emission limits of Condition 1.3.6 shall be based on the records required by Condition 1.3.9, emission factors published by USEPA for uncontrolled operations and the manufacturer guaranteed emissions rates for air pollution control equipment for controlled operation.

## 1.4 Group 4: Fermentation

### 1.4.1 Description

Ethanol is produced by fermentation of the starch in corn. The corn is first prepared for fermentation by converting it to "mash", by the addition of water and enzymes to ground corn in a series of saccharification tanks, that with heating, break the ground corn into fine slurry. In the fermentation tanks, yeast is added to the corn slurry to begin the batch fermentation process.

The $CO_2$-rich gas generated by the fermentation tanks is routed through a scrubber to recover ethanol and other organic compounds in the exhaust. The wastewater generated from the scrubbing process is routed back to the fermentation mash for distillation and dehydration.

### 1.4.2 List of Emission Units and Pollution Control Equipment

| Emission Unit | Description | Emission Control Equipment |
|---|---|---|
| EP 5-A | Slurry Tank<br>In-line Cooking System<br>Flash Tank<br>Yeast Tank<br>Liquefaction Tanks<br>Fermenters<br>Beer Well | Fermentation Scrubber |

### 1.4.3 Applicability Provisions and Applicable Regulations

a. An "affected process" for the purpose of these unit specific conditions is an emission unit described in Conditions 1.4.1 and 1.4.2.

b. An affected process is subject to 35 IAC 212.321(b)(1), which provide that:

No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced on or after April 14, 1972, at a source or

premises, exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.321 (See also Attachment 2) [35 IAC 212.321(a)].

1.4.4 Non-Applicability of Regulations of Concern

N/A

1.4.5 Operational and Production Limits and Work Practices

a. The Permittee shall maintain the affected process and associated air pollution control equipment in accordance with good air pollution control practice to assure proper functioning of equipment and minimize malfunctions, including performing maintenance in accordance with manufacturer recommendations.

b. The fermentation scrubber shall be designed to achieve a minimum of 95 percent removal of VOM from the process exhaust.

1.4.6 Emission Limitations

a. Emissions of VOM from an affected process shall not exceed the following:

| VOM Emissions | |
|---|---|
| (Lb/Hr) | (Ton/Yr) |
| 5.8 | 8.43 |

b. Emissions of particulate matter from any affected process shall not exceed 0.1 lb/hr and 0.44 tons/year.

1.4.7 Testing Requirements

See Condition 2.0

1.4.8 Monitoring Requirements

a. i. The Permittee shall equip the fermentation scrubber with a continuous monitoring device for temperature of scrubbant exiting the scrubber. This device shall be installed, calibrated and maintained according to the supplier's specifications and record data average data for 3-hour periods of scrubber operating.

ii. The Permittee shall keep records at least one per shift of other key operating parameters of the fermentation scrubber, such as, scrubbant flow rate scrubbant recirculation rate, gas exhaust temperature, and pressure drop.

iii. The Permittee shall keep an operation log and a log for inspection, maintenance, and repairs for fermentation units and associated scrubber including the time when the scrubber is not in operation.

iv. The Permittee shall keep records of the VOM and HAP emissions from fermentation (tons/month and tons/year), as determined at the scrubber and any other vents, based on appropriate emission factors, with supporting calculations.

1.4.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items for the affected process:

a. Recordkeeping of normal process parameters, with supporting calculations and documentation:

i. Amount of VOM and VOM concentration in the $CO_2$ feed (in lb VOM/lb of $CO_2$); and

ii. Scrubber Efficiency for VOM (%);

b. Recordkeeping for operation of the fermentation process and $CO_2$ scrubber, including:

i. Identification of any periods of scrubber upsets and the operating levels during such periods and identification of periods of time when the $CO_2$ scrubber discharges to the atmosphere rather than to a $CO_2$ plant.

ii. Records for any period during which any affected process was in operation when the scrubber was not in operation or was malfunctioning so as to cause an emissions level in excess of the emissions limitation. These records shall include documentation of causes for pollution control equipment not operating or such malfunction and shall state what corrective actions were taken and what repairs were made.

c. Recordkeeping of maintenance and repair:

Written or electronic records of inventory and documentation of inspections, maintenance, and repairs of all air pollution control equipment.

d. The Permittee shall keep records for upsets in fermentation operations or other operations that could generate additional VOM emissions, with a description of the incident, an estimate of the additional VOM and HAP emissions that occurred with supporting calculations, and background information.

e. Monthly and annual emissions of VOM and HAP calculated in accordance with compliance procedures established in Condition 1.4.12, to be compiled quarterly.

1.4.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA of noncompliance with the emission limitations as follows:

a. If there is an exceedance of applicable requirements for the scrubber, as determined by the monitoring required by Condition 1.4.8, the Permittee shall submit a quarterly report.

b. If there is an exceedance of the emission limitation or other requirement of this permit, the Permittee shall submit a report to the Illinois EPA within 30 days. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance and efforts to reduce emissions and future occurrences.

1.4.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

1.4.12 Compliance Procedures

Compliance with the unit-specific emission limits of Condition 1.4.6 shall be based on the records required by Condition 1.4.9 and the use of manufacturer guaranteed emissions factors.

## 1.5 Group 5: Distillation and Spent Distillers Grain Drying

### 1.5.1 Description

During the distillation process, the solids and water are separated from the ethanol-rich "beer" produced in the fermentation tanks with a vacuum distillation system, to produce 190 proof ethanol (5% water), which is dried to 200 proof in a molecular sieve. Denaturant is added to the finished product tank prior to loadout. The emissions from the distillation process are vented through a scrubber and then routed to the coal-fired boiler.

Stillage from the bottom of the distillation system are routed to mechanical centrifuges for de-watering. The water, "thin stillage" is pumped to a steam driven evaporator to produce a thick syrup. This syrup, and wet cake from the centrifuge and the syrup solubles from the evaporator, are conveyed to dryers that are indirectly heated with steam. The dryers remove moisture and produce dried distillers' grains with solubles (DDGS), which is sold as cattle feed. The feed is conveyed to a storage area to cool and readied for shipment via rail car or truck.

A non-contact cooling tower is used as a heat exchanger to cool the heat generated during the production process.

### 1.5.2 List of Emission Units and Pollution Control Equipment

| Emission Unit | Equipment | Description | Emission Control Equipment |
|---|---|---|---|
| EP 5-C | Distillation Process | Distillation & Dehydration System | Process Scrubber and Main Coal-Fired Boiler |
| | | Beer Column | |
| | | Whole Stillage Tank | |
| | | Rectifier Column | |
| | | Side Stripper | |
| | | Molecular Sieve | |
| | | Decanting Centrifuges | |
| EP 3 | | Two Dried Distillers' Grains with Solubles (DDGS) Dryers and a Cooler | DDGS Cyclones and Coal/Co-Gen Boiler (see Condition 1); No control if boiler is shutdown |
| | | DDGS Storage Building | Enclosed |
| EP 10 | | DDGS Loadout (Truck & Rail) | Loadout Bag Filter |
| EP 13 | | Spent Distillers Grain Internal Operations/Flat Storage | Enclosed Building |
| EP 10 | | Spent Distillers Grain Wet Cake Loadout | None |
| EP 5-B | | Cooling Tower | Drift Eliminator |

1.5.3 Applicability Provisions and Applicable Regulations

a. An "affected process" for the purpose of these unit specific conditions is an emission unit described in Conditions 1.5.1 and 1.5.2.

b. An affected process is subject to 35 IAC 212.321(b)(1), which provides that:

No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced on or after April 14, 1972, at a source or premises, exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.321 (See also Attachment 2) [35 IAC 212.321(a)].

1.5.4 Non-Applicability of Regulations of Concern

a. This permit is based on the affected process being exempted from applicability of 35 IAC Part 215, Subpart K because the organic material emissions in the exhaust stream are routed to the process scrubber and coal-fired boiler.

b. This permit is issued based on the affected process not being subject to either 40 CFR 60, Subpart NNN or RRR, Standards of Performance for Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industry Distillation Operations, or Reactor Processes, respectively, because the operations involve a biological reaction.

1.5.5 Operational and Production Limits and Work Practices

a. Direct venting of the DDGS exhaust to the atmosphere shall not exceed 325 hours in any 12 month period.

b. The Permittee shall maintain and repair all air pollution control equipment in a manner that assures that the emission limits and standards in 35 IAC 212.321 shall be met at all times. Proper maintenance shall include the following minimum requirements:

i. Visual inspection of air pollution control equipment;

ii. Expeditious repairs, unless the emission unit is shutdown.

c. i. A. The VOM emissions from the principle distillation units shall be controlled by at least 96 weight percent or to a concentration of no more than 20 ppmv, whichever is less stringent.

B. The operating parameter(s) of the air pollution control equipment for the principle distillation units shall be maintained at levels that are consistent with levels at which emission testing demonstrated compliance with applicable requirements.

1.5.6 Emission Limitations

a. The affected process is subject to the following limitations when the coal-fired boiler is shutdown and the unit is vented directly to the atmosphere. These limitations are based on information in the application for the maximum emissions of the DDGS dryers, which reflect worst-case emissions as measured at uncontrolled direct-fired DDGS feed dryers, rather than steam tube dryers:

i. DDGS Dryers

| VOM | | CO | | PM | |
|---|---|---|---|---|---|
| (Lb/Hr) | (Ton/Yr) | (Lb/Hr) | (Ton/Yr) | (Lb/Hr) | (Ton/Yr) |
| 340.8 | 55.38 | 69.59 | 11.29 | 32.4 | 5.27 |

ii. Distillation Process Scrubber

| VOM | |
|---|---|
| (Lb/Hr) | (Ton/Yr) |
| 3.55 | 0.58 |

Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

b. Emissions of PM and $PM_{10}$ from the cooling tower, other DDGS internal transfer/loading operations shall not exceed the following limitations:

| Process or Operation | Emission Rate Lb/hr | Emissions tons/year |
|---|---|---|
| Cooling Tower | 1.12 | 4.92 |
| DDGS Transfer to Internal Storage | 0.30 | 1.30 |
| DDGS Internal Operations | 0.09 | 0.40 |
| DDGS Truck/Rail Transfer | 0.086 (lb/ton) | 5.65 |

Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

1.5.7 Testing Requirements

See Condition 2.0

1.5.8 Instrumentation and Monitoring Requirements

None

1.5.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items for the affected process to demonstrate compliance with conditions of this permit:

a. Process Parameters for affected processes listed in Condition 1.5.6(a):

i. Air flow (acfm);

ii. Temperature (°F);

iii. Dry air flow (in lb/hr);

iv. Water volume (lb/hr).

b. Cooling tower process parameters

i. Water circulation rate (in gal/min)

ii. Total dissolved solids concentration (ppm); and

iii. Drift loss (%).

c. Operating records for affected processes

i. Total hours per month that the DDGS exhaust was vented directly to the atmosphere.

ii. Feed production as shipped, (dry feed: tons/month and tons/year, and wet feed: tons/month and tons/year).

iii. The owner or operator shall document any period during which any process emission unit was in operation when the air pollution control equipment was not in operation or was malfunctioning so as to cause an emissions level in excess of the emissions limitation. These records shall include documentation of causes for pollution control equipment not operating or such malfunction and shall state what corrective actions were taken and what repairs were made;

iv. The Permittee shall maintain a file that contains the manufacturer's specifications for maximum fuel firing rate to each feed dryer.

d. The Permittee shall maintain the following records for maintenance and repair:

Written or electronic records of inventory and documentation of inspections, maintenance, and repairs of all air pollution control equipment;

e. Monthly and annual emissions of PM, $PM_{10}$ and VOM calculated in accordance with compliance procedures in Condition 1.5.12.

1.5.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA of noncompliance with the emission limitations as follows:

If there is an exceedance of the emission limitations of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Illinois EPA within 30 days after the exceedance first becomes known. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or violation and efforts to reduce emissions and future occurrences.

1.5.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

1.5.12 Compliance Procedures

a. Compliance with the particulate matter limitations in Condition 1.5.6 is assured and achieved by the proper operation and maintenance of the filters and scrubbers as required by this section and the work-practices inherent in operation of the affected distillation process.

b. Compliance with the unit-specific emission limits of Condition 1.5.6 shall be based on the records required by Condition 1.5.9 and the use of manufacturer guaranteed emissions factors.

1.6 Group 6: Ethanol and Denaturant Storage Tanks

1.6.1 Description

Internal floating roof storage tank(s) are used to store denaturant and product ethanol.

1.6.2 List of Emission Equipment and Pollution Control Equipment

| Storage Tank EP 8 | Description | Emission Control Equipment |
|---|---|---|
| T01 | 200 Proof Day Tank Nominal Capacity: 78,000 Gallons | Internal Floating Roof with Primary and Secondary Seals |
| T02 | 190 Proof Ethanol Storage Nominal Capacity: 39,000 Gallons | Internal Floating Roof with Primary and Secondary Seals |
| T03 | Denaturant Tank Nominal Capacity: 30,000 Gallons | Internal Floating Roof with Primary and Secondary Seals |
| T04 | Finished Product Storage Tank Nominal Capacity: 500,000 Gallons | Internal Floating Roof with Primary and Secondary Seals |

1.6.3 Applicability Provisions

a. An "affected tank," for the purposes of these unit specific conditions is a storage tank as described in Conditions 1.6.1 and 1.6.2 that is subject to the requirement of 40 CFR 60 Subparts A and Kb that relies on an internal floating roof for compliance. A new storage tank is subject to the control requirements of 40 CFR 60 Subpart Kb if it has a design capacity greater than or equal to 151 $m^3$ (approx. 39,890 gal) containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 5.2 kPa (0.754 psia) but less than 76.6 kPa (11.1 psia) or with a design capacity greater than or equal to 75 $m^3$ (19,813 gal) but less than 151 $m^3$ (39,890 gal) containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 27.6 kPa (4.00 psia) but less than 76.6 kPa (11.1 psia).

b. Unless exempted pursuant to 35 IAC 215.122(c), an affected storage tank is subject to the control requirements of 35 IAC 215.122 with a storage capacity of greater than 250 gal is required to be equipped with a permanent submerged loading pipe or

an equivalent device approved by the Illinois EPA. The Illinois EPA has not approved any alternative control. [Submerged Loading Pipe - 35 IAC 215.122(b)]

c. Each storage tank subject to 40 CFR 60 Subpart Kb is hereby shielded from compliance with 35 IAC 215.120, 215.127, 215.128, and 215.129. This shield is issued to streamline the applicable requirements for the source, based on the Illinois EPA's finding that compliance with 40 CFR 60, Subpart Kb assures compliance with 35 IAC 215.121, 215.127, and 215.128, following the review requirements of 40 CFR 60 Subpart Kb and 35 IAC 215.121, 215.127, and 215.128.

1.6.4 Non-Applicable Regulations

a. Each affected storage tank is not subject to the requirements of 40 CFR 60 Subpart K or Ka because the tanks were constructed after the date that the NSPS became applicable.

b. An affected tank is not subject to the limitations of 35 IAC 215.121 – Storage Containers of VPL and 35 IAC 215.123 – Petroleum Liquid Storage Tanks, because three of the tanks are used solely for the storage of VOLs not defined as petroleum liquids (See Condition 1.6.7(a)) and the one tank containing petroleum liquid does not meet the size threshold for applicability. [35 IAC 215.121 and 215.123]

c. Tanks T01 and T02 are not subject to the control requirements of 40 CFR Subpart Kb because the vapor pressure of the material stored is less than 0.754 psia.

1.6.5 Control Requirements

Each affected tank shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof [40 CFR 60.112b(a)(1)(ii)]:

a. A foam-or liquid-filled seal mounted in contact with the liquid (liquid-mounted seal). A liquid-mounted seal means a foam-or liquid-filled seal mounted in contact with the liquid between the wall of the storage vessel and the floating roof continuously around the circumference of the tank.

b. Two seals mounted one above the other so that each forms a continuous closure that completely covers the

space between the wall of the storage vessel and the edge of the internal floating roof. The lower seal may be vapor-mounted, but both must be continuous.

c. A mechanical shoe seal. A mechanical shoe seal is a metal sheet held vertically against the wall of the storage vessel by springs or weighted levers and is connected by braces to the floating roof. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

1.6.6 Emission Limitations

Emissions of VOM from the affected storage tanks shall not exceed the following limits:

| VOM Emissions | |
|---|---|
| (Ton/Month) | (Ton/Year) |
| 0.4 | 1.88 |

Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

1.6.7 Operating Requirements

a. Each affected tank is limited to the storage of ethanol or denaturant.

b. Each affected tank shall be operated in compliance with the operating requirements of 40 CFR 60.112b(a)(1) and 60.113b(a), as follows:

i. The internal floating roof shall float on the liquid surface at all times, except during those intervals when the storage tank is being completely emptied and subsequently refilled and the roof rests on its leg supports. When the roof is resting on its leg supports, the process of emptying or refilling shall be continuous and shall be accomplished as rapidly as possible [40 CFR 60.112b(a)(1)(i)]

ii. Each opening in a non-contact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents shall provide a projection below the liquid surface. [40 CFR 60.112b(a)(1)(iii)]

iii. Each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains shall be equipped with a cover or lid which is maintained in a closed position at all times (i.e., no visible gaps) except when the device is in actual use. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted except when they are in use. [40 CFR 60.112b(a)(1)(iv)]

iv. Automatic bleeder vents shall be equipped with a gasket and be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. [40 CFR 60.112b(a)(1)(v)]

v. Rim space vents shall be equipped with a gasket and be set to open only when the internal floating roof is not floating or at the manufacturer's recommended setting. [40 CFR 60.112b(a)(1)(vi)]

vi. Each penetration of the internal floating roof for the purpose of sampling shall be a sample well. The sample well shall have a slit fabric cover that covers at least 90 percent of the opening. [40 CFR 60.112b(a)(1)(vii)]

vii. Each penetration of the internal floating roof that allows for the passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover. [40 CFR 60.112b(a)(1)(viii)]

viii. Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover. [40 CFR 60.112b(a)(1)(ix)]

ix. A tank that is in-service shall be repaired or emptied upon identification in an inspection that the floating roof is not resting on the surface of the VOL, there is liquid accumulated on the roof, the seal is detached, or there are holes or tears in the seal fabric. These actions shall be completed within 45 days of the inspection unless an extension is granted. [40 CFR 60.113b(a)(2) and (a)(3)(ii)]

x. A tank that is empty shall be repaired prior to refilling the tank upon identification in an inspection that the floating roof has defects, the primary seal has holes, tears or other openings in the seal or seal fabric, or the secondary seal has holes, tears or other openings in the seal or seal fabric, or the gaskets no longer close off. [40 CFR 60.113b(a)(3)(ii) and (a)(4)]

1.6.8 Inspection Requirements

The Permittee shall fulfill the applicable testing and procedures requirements of 40 CFR 60.113b(a) for each affected tank equipped with an internal floating roof as follows:

a. After completion of construction of each tank but prior to initially filling with VOL, visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service). If there are holes, tears, or other openings in the primary seal, the secondary seal, or the seal fabric or defects in the internal floating roof, or both, the Permittee shall repair the items before filling the storage tank. [40 CFR 60.113b(a)(1)]

b. For affected storage tanks equipped with a liquid-mounted or mechanical shoe primary seal, on an annual basis, visually inspect the internal floating roof and the primary seal or the secondary seal (if one is in service) through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill. If the internal floating roof is not resting on the surface of the VOL inside the storage tank, or there is liquid accumulated on the roof, or the seal is detached, or there are holes or tears in the seal fabric, the Permittee shall repair the items or empty and remove the storage tank from service within 45 days. If a failure that is detected during this inspection cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the Illinois EPA in the inspection report required in Condition 1.7.10(a)(i) (40 CFR 60.115b(a)(3)). Such a request for an extension must document that alternate storage capacity is unavailable and specify a schedule of actions the company will take that will assure that the control equipment will be repaired or the storage tank will be emptied as soon as possible. [40 CFR 60.113b(a)(2)]

c. For storage tanks equipped with both primary and secondary seals, the Permittee shall visually inspect the affected storage tanks as follows: [40 CFR 60.113b(a)(3)]

i. Visually inspect the vessel as specified in Condition 1.6.8(d) at least every 5 years; or

ii. Visually inspect the vessel as specified in Condition 1.6.8(b) at least once every 12 months.

d. Visually inspect the internal floating roof, the primary seal, the secondary seal (if one is in service), gaskets, slotted membranes and sleeve seals (if any) each time the storage tank is emptied and degassed. If the internal floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, or the gaskets no longer close off the liquid surfaces from the atmosphere, or the slotted membrane has more than 10 percent open area, the Permittee shall repair the items as necessary so that none of the conditions specified in this paragraph exist before refilling the storage tank with VOL. In no event shall inspections conducted in accordance with this provision occur at intervals greater than 10 years in the case of tanks conducting the annual visual inspection as specified in Conditions 1.6.8(b) and (c)(ii) and at intervals no greater than 5 years in the case of tanks specified in Condition 1.6.8(c)(i). [40 CFR 60.113b(a)(4)]

Prior notification for the above inspection shall be given to the Illinois EPA as specified in Condition 1.6.10(b).

1.6.9 Recordkeeping Requirements

a. The Permittee shall fulfill the applicable recordkeeping requirements of 40 CFR 60.115b for each affected tank pursuant to 40 CFR 60.115b(a), as follows:

Keep a record of each inspection performed as required by Condition 1.6.8. [40 CFR 60.115b(a)(2)]

i. The date the inspection was performed;

ii. Who performed the inspection;

iii. The method of inspection;

iv. The observed condition of each feature of the internal floating roof (seals, roof decks and fittings), with the raw data recorded during the inspection; and

v. Summary of compliance.

b. The Permittee shall maintain records of the following for each affected tank to demonstrate compliance with the Out-of-Service Inspection requirements of Condition 1.6.8(d):

Sufficient records to identify whenever the tank is empty for any reason or whenever repairs are made as a result of regular inspection or incident of roof damage or defect.

c. The Permittee shall keep the operating records required by 40 CFR 60.116b for each affected tank, as follows:

Records of the VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period. [40 CFR 60.116b(c)]

d. The Permittee shall maintain records of the VOM emissions from each affected storage tank in accordance with the procedures outlined in Condition 1.6.12, so as to demonstrate compliance with the emission limitations of Condition 1.6.6.

e. Monthly and annual VOM emissions attributable to the affected storage tanks in tons/month and ton/year in accordance with the compliance procedures in Condition 1.6.12 to be calculated and recorded annually, unless a more frequent determination is necessary to determine whether the plant's annual emissions of VOM have exceeded the limit in Table II.

1.6.10 Reporting Requirements

a. The Permittee shall fulfill all applicable reporting and notification requirements of the NSPS, 40 CFR 60.7, for the affected tanks.

b. The Permittee shall submit written notifications and reports to the Illinois EPA as required by the NSPS, for each affected tank, as follows:

i. If any of the conditions described in Condition 1.6.8(b) are detected during the annual visual inspection required in Condition 1.6.8(b), a report shall be furnished to the Illinois EPA within 30 days of the inspection. Each report shall identify the storage vessel, the nature of the defects, and the date the storage vessel was emptied or the nature of and date the repair was made. [40 CFR 60.115b(a)(3)]

ii. Notify the Illinois EPA in writing at least 30 days prior to the filling or refilling of each storage tank for which an inspection is required by Conditions 1.6.8(a) and (d) of this section to afford the Illinois EPA the opportunity to have an observer present. If the inspection required by Condition 1.6.8(d) is not planned and the Permittee could not have known about the inspection 30 days in advance or refilling the tank, the Illinois EPA at least 7 days prior to the refilling of the storage tank. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the Illinois EPA at least 7 days prior to the refilling. [40 CFR 60.113b(a)(5)]

c. The Permittee shall promptly notify the Illinois EPA of noncompliance with the control and operating requirements as follows:

i. Any storage of VOL in an affected tank that is not in compliance with the control requirements due to absence of the features required by Condition 1.6.5, e.g., no "secondary seal," within five days of becoming aware of the non-compliance status. This notification shall include a description of the event, the cause for the non-compliance, actions taken to correct the non-compliance, and the steps taken to avoid future non-compliance.

ii. Any storage of VOL in an affected tank that is out of compliance with the control requirements (Condition 1.6.5) due to damage, deterioration, or other condition of the tank, within 30 days of becoming aware of the non-compliance status. This notification shall include a description of the event, the cause for the non-compliance, actions taken to correct the non-compliance, and the steps to be taken to avoid future non-compliance.

iii. Any exceedance of the operational requirements shown in Conditions 1.6.7.

iv. Any exceedance of the emission limits in Condition 1.6.6 within 30 days of performance of calculations identifying violation(s).

1.6.11 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to make the following physical or operational change with respect to an affected tank without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee's obligation to continue to comply with applicable requirements and to properly obtain a construction permit in a timely manner for any activity constituting construction or modification of the source, as defined in 35 IAC 201.102:

Changes in seal type and configuration, made during the course of normal repair and maintenance of an affected storage tank's floating roof.

1.6.12 Compliance Procedures

Emissions from each affected storage tank shall be determined through the use of the most current version of the TANKS program.

1.7 Group 7: Loading Racks
Control: Two Flares

1.7.1 Description

Loading racks are used to load ethanol into trucks and rail cars. The VOM emissions occur when material is loaded from the VOM-laden air displaced from the tank.

1.7.2 List of Emission Units and Pollution Control Equipment

| Emission Unit | Description | Emission Control Equipment |
|---|---|---|
| Truck Loading Rack | Loading Rack Used for Loading Ethanol Into Tank Trucks | Natural Gas-Fired Flare |
| Rail Car Loading Rack | Loading Rack Used for Loading Ethanol Into Rail Cars | Natural Gas-Fired Flare |

1.7.3 Applicability Provisions and Applicable Regulations

An "affected loading rack," for the purpose of these unit-specific conditions, is a loading rack described in Conditions 1.7.1 and 1.7.2.

1.7.4 Non-Applicability of Regulations of Concern

a. The affected loading rack will not be subject to applicable requirements for handling of gasoline because the vapor pressure of the ethanol product is less than 4.0 psi and hence will not be subject to the requirements applicable to handling of gasoline, including 40 CFR 60 Subpart XX, (the New Source Performance Standard (NSPS) for Bulk Gasoline Terminals).

b. The affected loading rack is excused from the requirement to use submerged loading pipes pursuant to 35 IAC 215.122(a) because each affected loading rack is equipped and operated with vapor collection and control equipment.

1.7.5 Control Requirements and Operational Limitations

a. The total organic compound emissions from the affected loading rack and associated vapor collection control unit shall not exceed 0.33 pounds per 1000 gallons of material loaded. This rate shall include those emissions not captured or controlled.

b. The Permittee shall not cause or allow the discharge of more than 3.6 kg/hr (8 lbs/hr) of organic material

into the atmosphere during the loading of any organic material from the aggregate loading pipes of any loading into any tank truck or trailer unless such loading area is equipped with submerged loading pipes or a device that is equally effective in controlling emissions and is approved by the Illinois EPA according to the provisions of 35 IAC 201, and further processed consistent with 35 IAC 218.108. At the time of issuance of this permit, the Illinois EPA has not approved any alternative to the submerged loading pipes. [35 IAC 218.122(a)]

c. Ethanol throughput through the loading rack shall not exceed the following limits:

| Organic Material Throughput | |
|---|---|
| (Gal/Month) | (Gal/Year) |
| 4,000,000 | 36,000,000 |

d. The vapor control system shall be operated at all times during the loading of organic liquids and all displaced vapors are to be vented only to the vapor control system.

e. At all times during the loading of organic liquids, the vapor control system shall operate and all vapors displaced in the loading of organic materials are to be vented only to the vapor control system.

f. There shall be no liquid drainage from the loading device of an affected loading rack when it is not in use.

g. The Permittee shall provide a pressure tap or equivalent on the vapor collection system associated with an affected loading rack. The vapor collection system and the organic material loading equipment shall be operated in such a manner that it prevents avoidable leaks of liquid during loading or unloading operations and prevents the gauge pressure from exceeding 18 inches of water and the vacuum from exceeding 6 inches of water and to be measured as close as possible to the vapor hose connection.

h. A reading equal to or greater than 100 percent of the lower explosive limit (LEL measured as propane) when tested in accordance with the procedure described in EPA 450/2-78-051 Appendix B, incorporated by reference in 35 IAC 218.112.

i. All loading and vapor return lines shall be equipped with fittings that are designed to be vapor tight.

1.7.6 Emission Limitations

a. Emissions of VOM from the affected loading racks shall not exceed the following limits:

| VOM Emissions (Ton/Month) | VOM Emissions (Ton/Year) |
|---|---|
| 0.2 | 0.93 |

Compliance with annual emission limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

b. This permit is issued based on negligible emissions of $NO_x$ and CO from the flare associated with the affected truck loading rack. For this purpose, emissions of each pollutant shall not exceed 0.1 lb/hr and 0.44 tons/year.

1.7.7 Testing Requirements

See Condition 2.0 for testing requirements

1.7.8 Instrumentation and Monitoring Requirements

The Permittee shall maintain and operate the rail loadout scrubber with instruments to measure the following operating parameters:

a. The pressure loss of the gas stream through the scrubber. The monitoring device must be accurate within ± 0.5 psig.

b. The scrubbing liquid flow rate or supply pressure to the scrubbing chamber. The monitoring device must be accurate within ±5 percent of the design scrubbing liquid supply pressure.

1.7.9 Recordkeeping Requirements

a. General Recordkeeping

The Permittee shall maintain records of the following for the affected loading racks:

The properties of the fuel ethanol distributed through the affected loading racks, as related to

emissions, i.e., storage temperature, vapor pressure and molecular weight;

b. Records of Operations

The Permittee shall maintain records of the following for the affected loading rack and associated vapor control unit:

The amount of material distributed through each affected loading rack, gal/month, and gal/year.

c. Inspection Requirements

The Permittee shall keep the records for inspection of each affected loading rack that includes, as a minimum, the following information:

i. Date of inspection;

ii. Findings (may indicate no leaks discovered; or location, nature, and severity of each leak);

iii. Leak determination method;

iv. Corrective action, including the date each leak was repaired and the reasons for any repair interval in excess of 15 days; and

v. Name and signature of the person that performed the inspection.

d. Monthly and annual VOM emissions attributable to the affected loading rack in tons/month and ton/year in accordance with the compliance procedures in Condition 1.7.12 to be calculated and recorded annually, unless a more frequent determination is necessary to determine whether the plant's annual emissions of VOM have exceeded the limit in Table II.

1.7.10 Reporting Requirements

The Permittee shall provide an annual report, to be submitted with the source's annual emission report, which includes the following:

a. The monthly and annual throughputs for each affected loading rack for each month of the previous calendar year, in gallons/month and gallons/year.

b. Any deviations to the requirements of Conditions 1.7.4 through 1.7.9.

Note: The Illinois EPA may elect to require semi-annual or quarterly submission of the reports if the Illinois EPA observes a pattern of ongoing deviations.

1.7.11 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to make the following physical or operational change with respect to these units without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee's obligation to properly obtain a construction permit in a timely manner for any activity constituting construction or modification of the source, as defined in 35 IAC 201.102:

Changes in fittings or seal type configuration, made during the course of normal repair and maintenance of an affected loading rack.

1.7.12 Compliance Procedures

Compliance with the unit-specific emission limits of Condition 1.7.6 shall be based on the records required by Condition 1.7.9, the use of appropriate emission factors, including published USEPA emissions factors, and standard AP-42 emission factors, as control systems are properly operated.

1.8 Group 8: Roadways and other sources of fugitive dust

1.8.1 Description

Fugitive dust/particulate matter emissions are generated by activities such as material handling operations and vehicle traffic on roadways.

1.8.2 List of Emission Units and Pollution Control Equipment

| Emission Unit | Description | Emission Control Equipment |
|---|---|---|
| "Area Sources" of dust<br><br>EP 14 | Vehicle Traffic, Paved and Unpaved Plant Roads and Parking Lots | Water Suppressant control, as necessary Secondary Seals |
| | Occasional Bulk Unloading, Bag and Other Container Handling | Closed containers |
| | Loading to temporary grain storage piles | Covered tarp |

1.8.3 Applicable Regulations

a. The "affected operations" for the purpose of these unit-specific conditions are the operations described in Condition 1.8.1 and 1.8.2.

b. Visible emissions of fugitive particulate matter from any process, including material handling or storage activity, shall not be present beyond the property line of the source, pursuant to 35 IAC 212.301.

1.8.4 Non-Applicability of Regulations of Concern

a. The affected operations are not subject to the requirements of 35 IAC 212.304 through 310 or 312 or 316, because the source is not located in an area where those rules apply.

b. The affected operations are not subject to the requirements of 35 IAC 212.321 ("the process weight rate" rule) because fugitive emitting operations are not processes that can be vented to a control device.

1.8.5 Operational and Production Limits and Work Practices

a. The Permittee shall follow good air pollution control practices to minimize nuisance fugitive dust from plant roads, parking areas, and other open areas of the plant. These practices shall provide for pavement on all regularly traveled entrances and

exits to the plant and treatment (sweeping and water suppressant application, etc., when necessary) of paved and unpaved roads and areas that are routinely subject to vehicle traffic in order to achieve effective control of dust (nominal 80 percent for paved roads and areas and 50 percent control for unpaved roads and areas).

b. Emissions of fugitive particulate matter from DDGS loadout shall be controlled by partial enclosure and loadout practices to minimize breakage.

1.8.6 Emission Limitations

a. Emissions of PM from the affected operations shall not exceed 14.44 tons per year.

b. Emissions of PM/PM10 from the temporary grain storage pile, occasional bulk unloading, bag and other container handling shall be assumed to be negligible, i.e., not to exceed 0.1 lb/hr and 0.44 tons/year.

1.8.7 Testing Requirements

None

1.8.8 Monitoring Requirement

None

1.8.9 Recordkeeping Requirements

a. The Permittee shall maintain a written fugitive dust control program describing the measures being implemented to demonstrate compliance with 1.8.3, 1.8.5 and 1.8.6, to control fugitive dust at each area of the plant with the potential to generate significant quantities of fugitive dust. This program shall include: (i) A map or diagram showing the location of all fugitive emission units controlled, including the location, identification, length, and width of roadways, and volume and nature of expected traffic or other activity; (ii) estimated dust emissions control technique (e.g., water spray surfactant spray, water flushing, or sweeping); (iii) triggers for additional control, e.g., observation of extended dust plumes following passage of vehicles.

b. The Permittee shall maintain records documenting implementation of the fugitive dust control program, including:

i. For each application of water to roadways by truck: the name and location of the roadway controlled, application rate of each truck, frequency of each application, width of each application, identification of each truck used, and total quantity of water used for each application;

ii. A log recording incidents when control measures were not used and a statement of explanation.

b. The Permittee shall submit a copy of a revised fugitive dust control program to the Illinois EPA for review within 90 days of a request from the Illinois EPA for a revision to the program to address observed deficiencies in the control program.

1.8.10 Reporting Requirements

a. The Permittee shall submit an annual report to the Illinois EPA stating the following: the dates any necessary control measures were not implemented, a listing of those control measures, the reasons that the control measures were not implemented, and any corrective actions taken. This information includes, but is not limited to, those dates when controls were not applied based on a belief that application of such control measures would have been unreasonable given prevailing atmospheric conditions. This report shall be submitted to the Illinois EPA no later than 45 calendar days from the end of each calendar year.

b. The Permittee shall promptly notify the Illinois EPA, of other noncompliance of the affected operations with the permit requirements as follows. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

1.8.11 Operational Flexibility/Anticipated Operating Scenarios

None

1.8.12 Compliance Procedures

Compliance with Condition 1.8.6 shall be based on the records required by Condition 1.8.9 and the use of appropriate emission factors.

1.9 Group 9: Leaking Components
Control: None

1.9.1 Description

Equipment components, such as valves, flanges, etc., involved with the fermentation, distillation and subsequent handling of ethanol and denaturant generate VOM emissions when they leak.

1.9.2 List of Emission Equipment and Pollution Control Equipment

| Emission Unit | Description | Emission Control Equipment |
|---|---|---|
| Equipment Components (Valves, Flanges, Pump Seals, Etc.) EP 9 | Leaks that occur in the piping system | Work Practices and Equipment Replacement |

1.9.3 Applicability Provisions

a. The "affected units" are equipment components, described in Condition 1.9.1 and 1.9.2 that are in VOM service.

b. Pursuant to 35 IAC 215.142, no person shall cause or allow the discharge of more than 32.8 ml (2 cu in) of volatile organic liquid (VOL) with vapor pressure of 17.24 kPa (2.5 psia) or greater at 294.3°K (70°F) into the atmosphere from any pump or compressor in any 15 minute period at standard conditions.

c. The affected units are subject to the requirements of 40 CFR 60, Subparts A and VV – Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry.

1.9.4 Non-Applicable Regulations

The affected units are not subject to the requirements of 35 IAC Subpart Q: Leaks from Synthetic Organic Chemical and Polymer Manufacturing Equipment, pursuant to the applicability provisions of 35 IAC 215.420, because the plant will have less than 1,500 components in gas or light liquid service (which components are used to manufacture the synthetic organic chemicals or polymers listed in Appendix D).

1.9.5 Control Requirements

The Permittee shall follow the work practice requirements set in 40 CFR 60.482-1 (Standards: general), 60.482-2 (Standards: Pumps in light liquid service), 60.482-4 (Standards: Pressure relief devices in gas/vapor service), 60.482-5 (Standards: Sampling connection systems), 60.482-6 (Standards: Open-ended valves or lines), 60.482-7 (Standards: Valves in gas/vapor service and light liquid service), 60.482-8 (Standards: Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and flanges and other connectors), 60.482-9 (Standards: Delay of repair), and 60.482-10 (Standards: Closed vent systems and control devices).

Note: The Permittee may elect to utilize the alternative standards of 40 CFR 60.483-1 through 60.483-2, where applicable.

1.9.6 Emission Limitations

Emissions of VOM from the affected components shall not exceed 10.64 tons per year.

1.9.7 Operating Requirements

a. For affected components that are not subject to 40 CFR Part 60, Subpart VV, the Permittee shall repair any affected component from which a leak of volatile organic liquid (VOL) is detected or observed. The repair shall be completed as soon as practicable but no later than 21 days after the leak is found. If the leaking component cannot be repaired until the process unit is shut down, the leaking component must then be repaired before the unit is restarted.

b. The Permittee shall follow the operating requirements set in 40 CFR 60.482-1 (Standards: general), 60.482-2 (Standards: Pumps in light liquid service), 60.482-4 (Standards: Pressure relief devices in gas/vapor service), 60.482-5 (Standards: Sampling connection systems), 60.482-6 (Standards: Open-ended valves or lines), 60.482-7 (Standards: Valves in gas/vapor service and light liquid service), 60.482-8 (Standards: Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and flanges and other connectors), 60.482-9 (Standards: Delay of repair), and 60.482-10 (Standards: Closed vent systems and control devices).

1.9.8 Inspection Requirements

The Permittee shall follow the inspection requirements set in 40 CFR 60.482-1 (Standards: general), 60.482-2 (Standards: Pumps in light liquid service), 60.482-4 (Standards: Pressure relief devices in gas/vapor service), 60.482-5 (Standards: Sampling connection systems), 60.482-6 (Standards: Open-ended valves or lines), 60.482-7 (Standards: Valves in gas/vapor service and light liquid service), 60.482-8 (Standards: Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and flanges and other connectors), 60.482-9 (Standards: Delay of repair), and 60.482-10 (Standards: Closed vent systems and control devices).

Note: The Permittee may elect to utilize the alternative standards of 40 CFR 60.483-1 through 60.483-2, where applicable.

1.9.9 Recordkeeping Requirements

a. The Permittee shall maintain records as specified in 40 CFR 60.486.

b. The Permittee shall keep records on at least an annual basis of the VOM and HAP emissions attributable to leaking components, with supporting documentation and calculations.

1.9.10 Reporting Requirements

a. The Permittee shall maintain a leaking components monitoring log which shall contain, at a minimum, the following information:

i. The name of the process unit where the component is located;

ii. The type of component (e.g., valve, seal);

iii. The identification number of the component;

iv. The date on which a leaking component is discovered;

v. The date on which a leaking component is repaired;

vi. The date and instrument reading of the recheck procedure after a leaking component is repaired;

vii. A record of the calibration of the monitoring instrument;

viii. The identification number of leaking components which cannot be repaired until process unit shutdown; and

ix. The total number of components inspected and the total number of components found leaking during that monitoring period.

b. Copies of the monitoring log shall be retained by the Permittee for a minimum of two years after the date on which the record was made or the report prepared.

c. Copies of the monitoring log shall be made available to the Illinois EPA, upon verbal or written request, at any reasonable time.

d. All required reports as specified at 40 CFR 60.487.

1.9.11 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to make the following physical or operational change with respect to these units without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee's obligation to properly obtain a construction permit in a timely manner for any activity constituting construction or modification of the source, as defined in 35 IAC 201.102:

The repair and replacement of components.

1.9.12 Compliance Procedures

Compliance with the unit-specific emission limits of Condition 1.9.6 shall be based on the records required by Condition 1.9.9 and the use of appropriate USEPA emissions factors for VOM losses from connectors, flanges, valves, loading arms, pumps and other leaking components.

1.10 Group 10: Fly Ash Handling

1.10.1 Description

Fly ash recovered by the baghouse on the coal-fired boiler is transferred to the fly ash storage silo. Displaced air from the fly ash storage silo is filtered through the bin vent dust filter. Stored fly ash is subsequently loaded out wet to trucks by mixing with water or loaded out dry in a totally enclosed system, with displaced air passed through a baghouse.

1.10.2 List of Emission Units and Pollution Control Equipment

| Emission Unit | Equipment | Description | Emission Control Equipment |
|---|---|---|---|
| EP 1-C | Fly Ash Handling Units | Ash Loadout Aspiration (EP 1-C) | Bag Filter |
| EP 1-G | | Enclosed Fly Ash Storage Silos | Bin Vent Filter |

1.10.3 Applicability Provisions and Applicable Regulations

a. An "affected unit" for the purpose of these unit specific conditions is equipment described in Conditions 1.10.1 and 1.10.2.

b. The affected units are subject to 35 IAC 212.321(b)(1), which provides that:

i. No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced after April 14, 1972, at a source or premises, exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.321.

ii. The affected units are subject to the opacity limitations of 35 IAC 212.123 and 212.301 (see Conditions 3(b)(i) and (ii)).

1.10.4 Non-Applicability of Regulations of Concern

None

1.10.5 Operational and Production Limits, and Work Practices

The Permittee shall maintain and repair all air pollution control equipment in a manner that assures that the emission limits and standards in 35 IAC 212.321 shall be met at all times. Proper maintenance shall include the following minimum requirements:

a. Visual inspection of air pollution control equipment;

b. Maintenance of an adequate inventory of spare parts; and

c. Expeditious repairs, unless the emission unit is shutdown.

1.10.6 Emission Limitations

a. Emissions of particulate matter from fly ash handling shall not exceed 0.30 lb/hr and 1.31 tons/year. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

b. Emissions of particulate matter from loadout shall not exceed 0.053 lb/ton, 219.34 lb/mo and 1.31 tons/year. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

1.10.7 Testing Requirements

See Condition 2.0

1.10.8 Monitoring Requirements

None

1.10.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items for affected units:

a. i. Records documenting inspections, maintenance, and repairs of all associated air pollution control equipment.

ii. The Permittee shall document any period during which an affected unit was in operation when the air pollution control equipment was not in

operation or was malfunctioning so as to cause an emissions level in excess of the emissions limitation. These records shall include documentation of causes for pollution control equipment not operating or such malfunction and shall state what corrective actions were taken and what repairs were made.

b. Total amount of fly ash handled, in tons/month and tons/year.

c. Monthly and annual emissions of PM and $PM_{10}$ calculated in accordance with compliance procedures established in Condition 1.10.12, to be calculated on a quarterly basis.

1.10.10 Reporting Requirements

The Permittee shall promptly submit written notifications and reports to the Illinois EPA non-compliance with the emission limitations and emissions of PM and other deviations as follows:

The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or violation and efforts to reduce emissions and future occurrences.

1.10.11 Operational Flexibility/Anticipated Operating Scenarios

None

1.10.12 Compliance Procedures

a. Compliance with the particulate matter limitations in Condition 1.10.3(b) is assumed to be achieved by the proper operation and maintenance of the pollution control equipment and the work-practices inherent in operation of the affected unit.

b. Compliance with the unit-specific emission limits of Condition 1.10.6 shall be based on the records required by Condition 1.10.9 and the use of manufacturer guaranteed emissions factors.

2.0 Emission Testing

a. i. Within 60 days after achieving the maximum production rate at which the affected units will be operated, but not later than 180 days after initial startup, the Permittee shall have tests conducted as stated below, as follows, at its expense by an approved testing service while the units are operating at maximum operation/load and other representative operating conditions.

Note: The units and pollutants to be tested:

| Unit/Process | VOM | $PM/PM_{10}$ | $NO_x$ | CO | $SO_2$ | HCl | All HAP |
|---|---|---|---|---|---|---|---|
| Coal-Fired Boiler | X | X | X | X | X | X | X |
| Natural Gas-Fired Boiler | X | | X | X | | | |
| Raw Grain Dryer | | X | X | X | | | |
| Fuel Handling | | X | | | | | |
| Grain Handling/Processing* | | X | | | | | |
| Fermentation | X** | | | | | | X |
| Distillation/DDGS Drying*** | X** | X | | X | | | |
| Loading Rack | X | | | | | | |
| Railcar Ethanol Loading | X | | | | | | |
| Leaking Components | X | | | | | | |
| Fly Ash Processing | | X | | | | | |

* Testing shall be conducted at one grain handling baghouse and one processing baghouse as selected by the Illinois EPA.

** Test both emission rate and efficiency of control device. Efficiency testing need not be conducted if the Permittee is demonstrating compliance based on the concentration of VOM or CO in the exhaust.

*** Testing shall be conducted at the bypass vent or in the duct work prior to the coal-fired boiler.

Note: Where indicated, testing is to be conducted upon all control devices.

Note: For applicable NSPS units, no waiver may be allowed to extend time for testing.

ii. In addition to the emission testing required above, the Permittee shall perform emission tests as requested by the Illinois EPA for the affected units within 45 days of a written request by the Illinois EPA or such later date agreed to by the Illinois EPA.

b. The following methods and procedures shall be used for testing of emissions, unless another method is approved by the Illinois EPA. Refer to 40 CFR 60, Appendix A for USEPA test methods.

| | USEPA Method |
|---|---|
| Location of Sample Points | Method 1 |
| Gas Flow and Velocity | Method 2 |
| Flue Gas Weight | Method 3 or 3A |
| Moisture Content | Method 4 |
| Nitrogen Oxides* | Method 7, 7E or 19** |
| Opacity | Method 9 |
| Carbon Monoxide | Method 10 |
| Volatile Organic Material | Method 18, 25 or 25A*** |
| Sulfur Dioxide* | Method 6C and 19** |
| Hazardous Air Pollutants | Method 18 |
| Particulate Matter (PM) | Method 5 or another Method specified in 40 CFR 60, Part Db, where applicable |
| Hydrogen Chloride | Method 26A (isokinetio) |
| $PM_{10}$ | Method 201, 201A or RMS |
| Condensable $PM_{10}$ | Method 202 |

* Test in accordance with 40 CFR 60, Subpart Db.

** As specified in 40 CFR 60.48b(d)

*** These methods shall be used in accordance with USEPA's current guidance for VOM emission testing at ethanol production facilities, as approved by the Illinois EPA based on the required test plan submitted below.

c. The Permittee shall submit an initial test plan to the Illinois EPA 60 days prior to the startup of the plant.

d. The Illinois EPA shall be notified prior to these tests to enable the Illinois EPA to observe these tests. Notification and test protocol for the expected date of testing shall be submitted a minimum of thirty days prior to the expected date. Notification of the actual date and expected time of testing shall be submitted a minimum of 5 working days prior to the actual date of the test. Notwithstanding 40 CFR 60.8(d), the Illinois EPA may at its discretion accept notifications with shorter advance notice provided that the Illinois EPA will not accept such notifications if it interferes with the Illinois EPA's ability to observe testing.

e. Three copies of the Final Report for these tests shall be promptly submitted to the Illinois EPA and in no case later than 45 days after the test and shall include as a minimum:

i. A tabular summary of results which includes:

- Process rates (e.g., ethanol production rate, unit input, or unit firing rate, etc.)

- DDGS Dryer operating parameters (i.e., operating temperature and oxygen content in the flue gas leaving the dryers)

- Measured emission rates of all pollutants measured

- Emission factor, calculated using the average test results in the terms of the applicable limits, for example, in units of lbs pollutant emitted per ton of ethanol produced

- Compliance demonstrated - Yes/No

ii. Description of test methods and procedures used, including description of sampling train, analysis equipment, and test schedule.

iii. Detailed description of test conditions, including:

- Pertinent process information (e.g. fuel, raw material analysis, process rate of grain, ethanol and feed production rate, VOM content in material, lb VOM/lb material for material entering the distillation process and feed dryer.)

- Control equipment information, i.e., equipment condition and pressure drop, flow rates, and other operating parameters during testing

iv. Data and calculations, including copies of all raw data sheets and records of laboratory analyses, sample calculations, and data on equipment calibration.

f. Copies of emission test reports shall be retained for at least five years after the date that an emission test is superseded by a more recent test.

3.0 General Plantwide Conditions

a. Sourcewide operating limitation

i. The annual amount of grain processed into ethanol at the plant shall not exceed 15.0 million bushels. Compliance with this annual limit shall be determined from a running total of 12 months of data.

ii. Ethanol production from the plant, determined as finished product shipped from the loading racks, shall not exceed 4.0 million gallons/month and 36 million gallons/year.

b. Sourcewide Operation and Emission Limitations

i. Plantwide emissions shall not exceed the limitations shown in Table I.

ii. VOM emissions from miscellaneous VOM emission units, e.g., wet cake storage pile, wet feed storage pile, mash screen vent, boiler feed water tank, syrup tank, and thin stillage tank, shall not exceed the stated limit in Table II. This limit is based on estimates of maximum VOM emissions made in the application. Compliance with this limit shall be determined on an annual basis.

iii. This permit is issued based on the source not being a major source for Hazardous Air Pollutants (HAP), and therefore will not be subject to the requirements of Section 112(g) of the Clean Air Act.

c. Emission units at this source are subject to the following regulations of general applicability:

i. No person shall cause or allow the emission of fugitive particulate matter from any process, including any material handling or storage activity, that is visible by an observer looking generally overhead at a point beyond the property line of the source unless the wind speed is greater than 40.2 kilometers per hour (25 miles per hour), pursuant to 35 IAC 212.301 and 212.314.

ii. No person shall cause or allow the emission of smoke or other particulate matter, with an opacity greater than 30 percent into the atmosphere from any emission unit other than those emission units subject to the requirements of 35 IAC 212.122, pursuant to 35 IAC 212.123(a), except as allowed by 35 IAC 212.123(b) and 212.124.

iii. Fabric filters (baghouses) on process emission units shall comply with an emission limit of 0.01 grain per standard foot (0.02 gr/scf for the feed cooler) and be operated and

maintained in accordance with good air pollution practice to minimize emissions.

iv. At all times, the Permittee shall maintain and operate emission units that are subject to the NSPS, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions, pursuant to 40 CFR 60.11(d).

d. The Permittee shall maintain records of all public inquiries regarding operations related to emissions, submit these records to the Illinois EPA upon request and provided to the public if requested.

e. Shakedown Notification and Reporting

i. The Permittee shall provide the Illinois EPA 30 days advance notification prior to start-up to allow inspection, and shall include a description of provisions for handling and timely disposition of feed that cannot be dried.

ii. The Permittee shall provide to the Illinois EPA immediate notification of any event(s) that disrupts order shakedown of the plant.

iii. The Permittee shall provide to the Illinois PEA progress reports, including, but not limited to, the following:

A. Overall operating level (gallons produced), feed production, and percent feed dried;

B. Activities accomplished/significant events;

C. Current schedule for emission testing;

D. A summary of any emission measurements conducted at the plant; and

E. Outreach activities planned/provided for local communities or interested parties.

iv. The Permittee shall provide the Illinois EPA notice as to when shakedown of the coal-fired boiler is considered complete.

f. i. This approval to construct does not relieve the Permittee of the responsibility to comply with all Local, State and Federal Regulations which are part of the applicable Illinois State Implementation Plan, as well as all other applicable Federal, State and Local requirements.

ii. In particular this permit does not excuse the Permittee from the obligation to undertake further actions at the source as may be needed to eliminate air pollution, including nuisance due to odors, such as raising the height of stacks, using alternative scrubbant materials, installing back-up control systems, altering process conditions in the dryers, or firing other fuels.

g. i. Any reports and notifications required by this permit shall be sent to the Illinois EPA at the following address unless otherwise indicated:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Compliance Enforcement Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276

ii. A copy of these reports and notifications, shall also be sent directly to the Illinois EPA's regional office at the following address:

Illinois Environmental Protection Agency
Division of Air Pollution Control
5415 North University
Peoria, Illinois 61614

iii. A copy of these reports and notifications concerning emission testing and initial installation and certification of continuous emission monitoring systems shall also be sent directly to the Illinois EPA's Source Monitoring Unit at the following address:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Source Monitoring Unit
9511 West Harrison
Des Plaines, Illinois 60016

If you have any questions on this permit, please call Bob Smet at 217/782-2113.

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

DES:RPS:jar

cc: Region 2

Table I: Primary Operating Scenario Emission Summary – Tons/Year

| Emission Unit Description | | $NO_x$ | CO | VOM | PM | $SO_2$ | HCl |
|---|---|---|---|---|---|---|---|
| | | TONS/YR | TONS/YR | TONS/YR | TONS/YR | TONS/YR | TONS/YR |
| EP 1-A | Boiler 1 - Coal / Co-Gen | 90.00 | 87.00 | 20.00 | 36.60 | 96.20 | 9.2 |
| EP 1-B | Fuel Handling | --- | --- | --- | 1.90 | --- | --- |
| EP 1-C and EP 1-G | Fly Ash Handling | --- | --- | --- | 2.62 | --- | --- |
| EP 1-E | Lime Storage Bin Vent | --- | -- | -- | 0.44 | --- | -- |
| EP 2-B | Secondary Boiler [A] | 4.00 | 6.72 | 0.44 | 0.61 | 0.05 | --- |
| EP 3 and EP 4 | DDGS Dryers [B] | --- | --- | --- | --- | --- | --- |
| EP 5-A | Fermentation [C] | --- | --- | 8.43 | 0.44 | --- | --- |
| EP 5-B | Cooling Tower | --- | --- | --- | 4.92 | --- | --- |
| EP 5-C | Distillation Process Scrubber [A] | --- | --- | --- | --- | --- | --- |
| EP 7 | Ethanol Loading Racks | 0.44 | 0.44 | 0.93 | --- | --- | --- |
| EP 8 | Storage Tanks | --- | --- | 1.88 | --- | --- | --- |
| EP 9 | Fugitive Leaks | --- | --- | 10.64 | --- | --- | --- |
| EPs 10, 11 and 12 | Grain Handling Activities | --- | --- | --- | 4.92 | --- | --- |
| EP 13-A | DDGS Loadout | | --- | --- | 7.35 | --- | --- |
| EP-14 | Fugitive Dust (Roads, Temporary Grain Storage Handling and Misc. Container Handling) | --- | --- | --- | 15.32 | --- | --- |
| EP-15 | Methanator Flare [D] | 0.44 | 0.44 | 0.44 | --- | --- | --- |
| EP-17 | Raw Grain Dryer | 1.28 | 2.14 | 0.14 | 12.51 | 0.02 | --- |
| | Miscellaneous Tanks (Syrup Tank, Thin Stillage Tank and Boiler Feed Water Tank) | --- | --- | 2.30 | --- | --- | --- |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | FACILITY WIDE TOTALS | 96.16 | 96.74 | 45.20 | 87.63 | 96.22 | 9.2 |

Notes:

A. Additional emissions from the secondary boiler have been estimated based on 1,000 hours/yr and are included in the primary operating scenario as a worst case estimate for purposes of demonstrating compliance with respect to the PSD applicability threshold (Special Condition 1.1.5b(iii)).

B. If the primary boiler is shutdown, there is a potential for direct emergency venting of emissions from the DDGS Dryers and Distillation Process Scrubber. The primary operating scenario presented in Table I includes the controlled emissions from these processes in the coal fired boiler emissions. Direct emergency venting will not occur more than 325 hours/yr (Special Condition 1.5.5a). Facility wide emissions for this worst case scenario are presented on Table II.

C. The emissions from the $CO_2$ scrubber will only occur when the CO2 plant is not operating (Special Condition 1.4.6a).

D. The Anaerobic Digester (Methanator) Flare will operate no more than 500 hours per year. The flare will only be used when the primary boiler is shutdown. Additional emissions from the Anaerobic Digester Flare have been estimated based on 500 hours/yr and are included in the primary operating scenario as a worst case estimate for purposes of demonstrating compliance with respect to the PSD applicability threshold.

Table II: Maximum Operating Scenario Emission Summary – Tons/Year [A]

| Emission Unit Description | | $NO_x$ | CO | VOM | PM | $SO_2$ | HCl |
|---|---|---|---|---|---|---|---|
| | | TONS/YR | TONS/YR | TONS/YR | TONS/YR | TONS/YR | TONS/YR |
| EP 1-A | Coal-Fired Boiler [B] | 90.00 | 87.00 | 20.00 | 36.60 | 96.20 | 9.2 |
| EP 1-B | Fuel Handling | --- | --- | --- | 1.90 | --- | |
| EP 1-C and EP 1-G | Fly Ash Handling | --- | --- | --- | 2.62 | --- | |
| EP 1-E | Lime Storage Bin Vent | --- | -- | -- | 0.44 | --- | |
| EP 2-B | Secondary Boiler [B] | 4.00 | 6.72 | 0.44 | 0.61 | 0.05 | |
| EP 3 and EP 4 | DDGS Dryers [C] | --- | 11.29 | 55.38 | 5.27 | --- | |
| EP 5-A | Fermentation [D] | --- | --- | 8.43 | 0.44 | --- | |
| EP 5-B | Cooling Tower | --- | --- | --- | 4.92 | --- | |
| EP 5-C | Distillation Process Scrubber [C] | --- | --- | 0.58 | --- | --- | |
| EP 7 | Ethanol Loading Racks | 0.44 | 0.44 | 0.93 | --- | --- | |
| EP 8 | Storage Tanks | --- | --- | 1.88 | --- | --- | |
| EP 9 | Fugitive Leaks | --- | --- | 10.64 | --- | --- | |
| EPs 10, 11 and 12 | Grain Handling Activities | --- | --- | --- | 4.92 | --- | |
| EP 13-A | DDGS Loadout | | --- | --- | 7.35 | --- | |
| EP-14 | Fugitive Dust (Roads, Temporary Grain Storage Handling and Misc. Container Handling) | --- | --- | --- | 15.32 | --- | |
| EP-15 | Methanator Flare [E] | 0.44 | 0.44 | 0.44 | --- | --- | |
| EP-17 | Raw Grain Dryer | 1.28 | 2.14 | 0.14 | 12.51 | 0.02 | |
| | Miscellaneous Tanks (Syrup Tank, Thin Stillage Tank and Boiler Feed Water Tank) | --- | --- | 2.30 | --- | --- | --- |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | FACILITY WIDE TOTALS | 96.10 | 99.92 | 99.38 | 92.90 | 96.27 | 9.2 |



Notes:

A. Maximum operating scenario for purposes of demonstrating compliance with respect to the PSD applicability threshold.

B. Emissions limits for the coal-fired boiler represent continuous operations, including process units vented through the boiler.

C. When the coal-fired boiler is shutdown, direct venting of emissions from the DDGS Dryers and Distillation Process Scrubber may be vented directly to the atmosphere. The limits reflect worst case venting for 325 hours/yr (Condition 1.5.5a). During such periods, the emissions of the process units are offset by the absence of emissions from the coal-fired boiler.

| | Hourly Emission (lb/hour) | | | | | |
|---|---|---|---|---|---|---|
| | $NO_x$ | CO | VOM | PM | $SO_2$ | HCl |
| DDGS Dryer | --- | 69.5 | 340.8 | 32.4 | -- | -- |
| Boiler | 20.6 | 19.9 | 4.6 | 8.4 | 21.7 | 2.1 |
| Net | -20.6 | +49.6 | +336.2 | +24.0 | -21.7 | -2.1 |

D. The emissions from the $CO_2$ scrubber will only occur when the $CO_2$ plant is not operating (Condition 1.4.6a), which is limited to 2,920 hours/year.

E. The Anaerobic Digester (Methanator) will discharge directly to the atmosphere for nor more than 500 hours per year, when the primary boiler is shutdown. Additional emissions from the Anaerobic Digester Flare have been estimated based on 500 hours/yr and are included in the this operating scenario as a worst case estimate for purposes of demonstrating compliance with respect to the PSD applicability threshold.